Next Generation Transit-Oriented Design

Fall 2020
TriMet

Robert Ribe

LA 489/589 Site Planning & Design

UNIVERSITY OF OREGON
TRIMET
SCI Sustainable Cities Institute
SCYP Sustainable City Year Program

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COLLEGE OF DESIGN

UNIVERSITY OF OREGON

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About SCI

The Sustainable Cities Institute (SCI) is an applied think tank focusing on sustainability and cities through applied research, teaching, and community partnerships. We work across disciplines that match the complexity of cities to address sustainability challenges, from regional planning to building design and from enhancing engagement of diverse communities to understanding the impacts on municipal budgets from disruptive technologies and many issues in between.

SCI focuses on sustainability-based research and teaching opportunities through two primary efforts:

1. Our Sustainable City Year Program (SCYP), a massively scaled university-community partnership program that matches the resources of the University with one Oregon community each year to help advance that community's sustainability goals; and

2. Our Urbanism Next Center, which focuses on how autonomous vehicles, e-commerce, and the sharing economy will impact the form and function of cities.

In all cases, we share our expertise and experiences with scholars, policymakers, community leaders, and project partners. We further extend our impact via an annual Expert-in-Residence Program, SCI China visiting scholars program, study abroad course on redesigning cities for people on bicycle, and through our co-leadership of the Educational Partnerships for Innovation in Communities Network (EPIC-N), which is transferring SCYP to universities and communities across the globe. Our work connects student passion, faculty experience, and community needs to produce innovative, tangible solutions for the creation of a sustainable society.

About SCYP

The Sustainable City Year Program (SCYP) is a year-long partnership between SCI and a partner in Oregon, in which students and faculty in courses from across the university collaborate with a public entity on sustainability and livability projects. SCYP faculty and students work in collaboration with staff from the partner agency through a variety of studio projects and service-learning courses to provide students with real-world projects to investigate. Students bring energy, enthusiasm, and innovative approaches to difficult, persistent problems. SCYP's primary value derives from collaborations that result in on-the-ground impact and expanded conversations for a community ready to transition to a more sustainable and livable future.

About TriMet

The Tri-County Metropolitan Transportation District of Oregon was created by the Oregon Legislature in 1969 to operate and oversee mass transit in the Portland Metropolitan region. This public entity was formed by the legislature as a municipal corporation to replace the multiple private interest mass transit companies that previously operated in Multnomah County, Clackamas County, and Washington County; the counties that make up TriMet.

In addition to operating bus lines, light rail, and paratransit in the defined Tri-Metropolitan district, TriMet also connects commuter rail to external mass transit services to provide wider blanket coverage for the region. TriMet's nationally recognized transit system provides more than 100 million rides annually, and carries 45% of rush hour commuters going into the downtown Portland area. TriMet not only moves people, but helps build sustainable cities by improving public health; creating vibrant, walkable communities; supporting economic growth; and working to enhance the region's livability.

Several civic leaders have been highlighted as key Figures in the creation, establishment, and ultimate success of TriMet. Governor Tom McCall is credited with the initial call for the creation of the public corporation; other key contributors include Congressman Earl Blumenauer, Rick Gustafson, Dick Feeney, and Mayor Neil Goldschmidt. All were instrumental in shaping the organization itself, as well as the land use, civic development, and transformation policies that make TriMet the success that it is today.

The vision and efforts of these individuals and countless others have borne fruit. Recently, TriMet celebrated the second anniversary of the opening of its most recent light rail line. Since its inauguration the 7.3-mile MAX Orange Line has experienced continued growth, having a six percent year-to-year increase in ridership. Illustrating the holistic approach that has been a part of TriMet from its inception, there have been wider community benefits such as a positive impact on employment and a focus on sustainable practices such as bio-swales, eco-roofs, a first-in-the-nation eco-track segment, solar paneling, and regenerative energy systems.

Course Participants

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Introduction

Greater Portland is known for controlling urban sprawl and its aggressive and successful reintroduction of rail-based regional public transit. A potential powerful synergy between these goals is transit-oriented development (TOD) whereby unusually dense and mixed land uses are profitably developed around transit stations with frequent, high-capacity service. This can significantly reduce sprawl pressures by providing substantial, concentrated housing supply that offers a high quality of life due to easy access to a robust regional transit network and nearby 'walking' access to diverse shopping, dining, schooling, cultural, employment, social service and recreational opportunities.

Transit-oriented developments often require public incentives and nurturing by local officials and planners. In the Portland region, such urban neighborhoods have been implemented in and near downtown Portland, notably the Pearl District, PCC neighborhood and South Waterfront, and further out at Orenco Station in Hillsboro, along the light rail Blue Line in Washington County. None other, of an appreciable magnitude, is to be found. As the region's light rail system has expanded into newer and emptier suburban areas one might have expected more transit-oriented developments to have appeared near stations, particularly in such an intensively planned landscape.

PROJECT OVERVIEW

Where and how might more transit-oriented developments be built, out beyond the older and denser parts of the region? A design studio class of landscape architecture students sought to explore this question among a few promising stations identified by TriMet planners (Figure 1). These were along the agency's light rail Red Line, including its extension westward along the existing Blue Line. The class' work is part of a larger TriMet's Next Generation Transit-Oriented Design initiative which seeks not only to promote more station area developments in the region but to fit them into already developed locations. Some other goals of this initiative, that the UO class attended to, included TOD design in new ways that might sustain social life among increasingly isolated individual lives and respond to contemporary challenges in fostering social and economic inclusion, low-income housing, new mobility technologies, emerging forms of employment and sustainability.

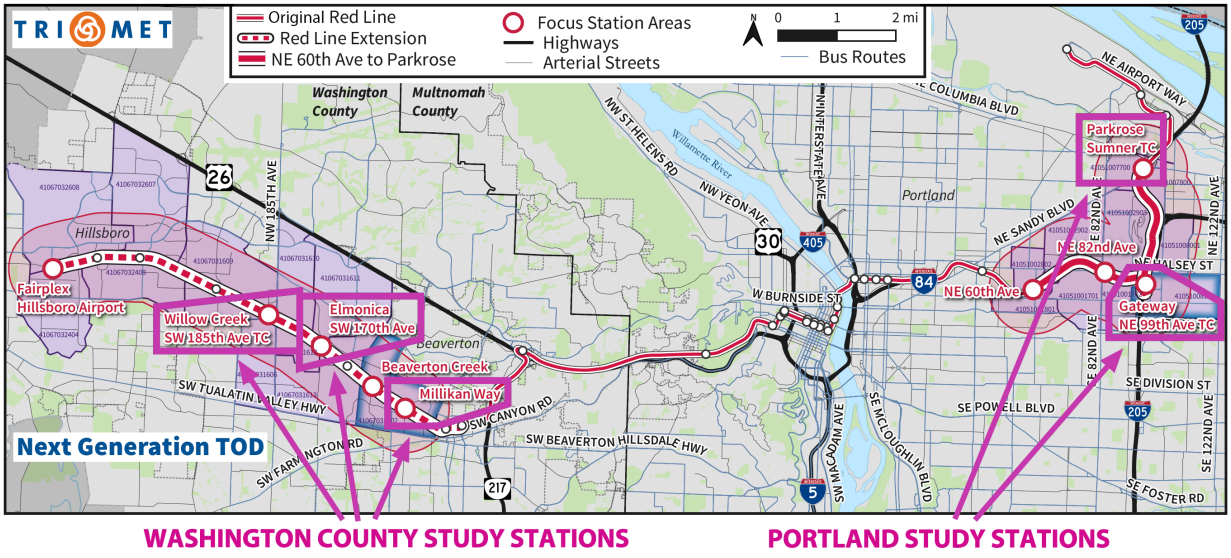


FIG. 1

Project station locations

Credit: Robert Ribe

TriMet sought creative and speculative ideas with only minimal attention to pragmatic, political, legal and financial constraints. More than usual attention (compared to most suburban transit-oriented developments) was sought in pursuing more low income and diverse housing types, perhaps through housing and mixed use buildings that exceed usual 3-5 story podium building heights. Proposed transit area plans were to be tailored to their local contexts, regional relationships and special site-specific opportunities while trying to integrate the full mix of uses and amenities that high-quality station areas can offer, including employment.

The class was made generally aware of the protracted and complex social, political, legal and financial process by which urban areas might come to be redeveloped. The kinds of planning steps, public participation processes, conflicts of interest, difficult negotiations, and financial and land use regulatory issues that must be resolved were sketched for the class. The students were aware that their work was to be brief and rapid (over a nine week academic term with travel restrictions) and not a substitute for the full consideration, public engagement and careful resolution of a redevelopment plan. They understood that their plans and designs are only an introductory set of ideas to begin conversations and initiate a robust planning process at each station that was studied.

The class had the capacity to study five of the stations TriMet is interested in (Figure 1) and their investigations circulated around a sequence of analyses:

1. Development Potential in Land Ownership and Use Patterns

Student teams spent just a few days exploring patterns of parcel sizes, property conditions, land uses and real estate values surrounding their study station. They looked at assessed values of land and improvements in search of parcels that might most profitably be redeveloped. They looked for larger parcels or those that might be combined for potential redevelopment. They inspected the

condition of buildings and evidence of weakening businesses on Google Street View (due to pandemic travel restrictions) in search of other potential redevelopment opportunities. They looked for parcels that are unlikely to be redeveloped but which nevertheless may be critical components of station area plans in eventually stitching together other parcels. All these cursory explorations suggested a potentially effective and reasonably implementable conceptual, diagrammatic, tentative plan for redevelopment of denser and mixed uses focused mainly on housing.

2. Landscape and Social Analysis of Station Areas

Each student team analyzed the geographic scope of their conceptual plan diagram area plus a substantial context area all around it. These analyses are listed below. They mainly served as learning exercises for the students and a rapid and intensive means for them to get to know their study area pretty well. These analyses influenced the students' planning and design decisions either directly or implicitly and to widely varying degrees. The resulting urban landscape analysis maps are mostly found in appendices to this report.

- Students mapped and summarized census data about ethnicity, incomes, ages, household sizes and other data they selected.
- Students mapped urban-character neighborhoods of various sizes based upon contiguous areas of a single relatively coherent characteristic urban pattern and dominant land use(s).
- Students mapped and classified existing streets and other pathways for cars, pedestrians, micro-vehicles, freight, transit and railroads in relation to the above neighborhoods and their light-rail station.
- Students mapped the dominant land use found within all parcels, and some also mapped current zoning districts in relation to these. (The class assumed that zoning districts must be changed to enable transit-oriented development.)
- Students mapped amalgamated land use categories according to broad urban functions.
- Students mapped building footprints in relation to their uses, heights, and other selected architectural attributes.
- Students also had the option of mapping land cover types, vegetation types, slopes, storm-water systems or other topics.

3. Urban Design Principles for Station Areas

Student teams studied urban design principles that have been developed for application to station area plans and designs. These included books and articles about pedestrian-oriented design, new mobility, new urbanism and mixed use. Topics covered included case studies (with a virtual tour of Orenco Station), urban design aesthetics, block sizes and patterns, design for micro-vehicles and ride sharing, parking design, mixed-use buildings, street design, low-income housing, inclusive design, urban forests, plazas and sidewalks, low impact storm-water design, park design, and the integration of employment centers into station areas.

These explorations into design principles were primarily educational and overwhelming for urban design beginners; but the teams were encouraged to identify and prioritize a few selected lessons learned into goals

and objectives for their subsequent plans and designs. They pursued these ideas and possibilities by producing conceptual sketches, clipping and combining images in exploratory graphics, and speculatively relating these to places or patterns in their study areas. Greg Snyder, Dave McIlnay and Jean Senechal Biggs contributed ideas and feedback.

4. Station Area Planning

Student teams applied their planning and design goals and landscape analyses to elaborating their initial concept diagrams into more detailed, functional and robust station area plan proposals. They considered alternative land use patterns and functional relationships, accessibility networks, circulation designs, transit and new mobility hubs, building types and heights, parking strategies, employment centers, social hubs and plazas, diversity and co-location of housing types, parks and parkways, and creation of visually attractive landmarks, nodes and pathways. They produced various maps, spatial diagrams and illustrative drawings to communicate their draft plan.

5. Design Details

Student teams' draft station area plans, and supporting information and graphics, were reviewed by the urban design and landscape architecture professionals from Portland and Eugene listed at the beginning of this report. These reviewers made suggestions about critical components and locations that needed strong resolution to make a plan succeed. Students revised their plans and identified focus areas for higher-resolution design. They were encouraged to favor small-scale locations and illustrative graphics that will help the public sense an experience of their proposed station area development and find it desirable.

6. Standard Class Mapping Legend

All the teams in the class were assigned a common, standard legend to color and symbolize uses and pathways in their proposed plans and diagrams. This aimed to make them all more readable and comparable to readers of this report. This legend is found in Figure 2. Student teams sometimes adapted this legend to fit their own proposals and graphic objectives.

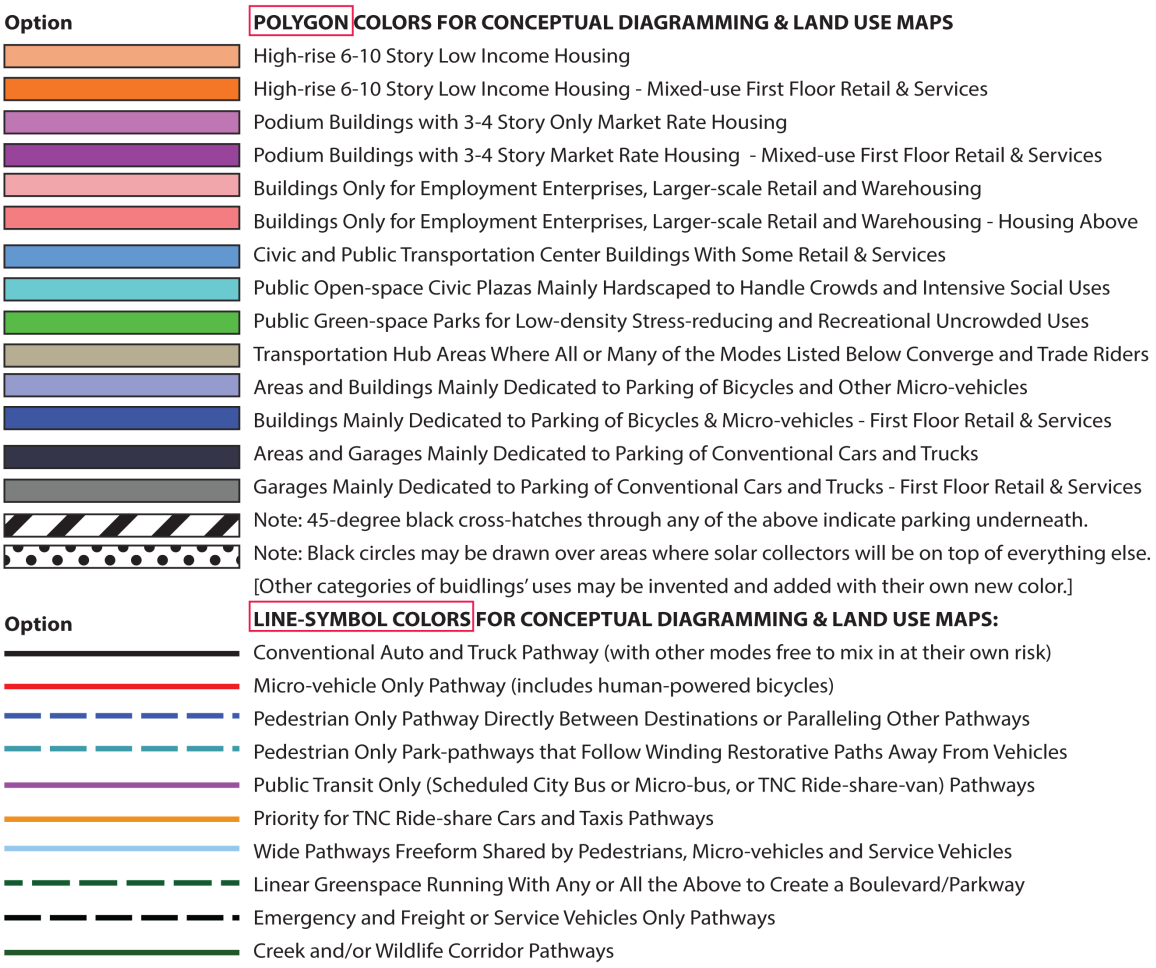


FIG. 2

Diagramming and mapping color legend

Willow Creek Station Area

BASIC LAND USE ANALYSIS

The map of ratios of land values to improvement values in Figure WC-1 shows more financially viable redevelopment areas in green and least viable areas in red. Moderately viable areas appear in yellow and slightly viable areas in orange. That map identifies three large parcels within a mile of the Willow Creek Station with high redevelopment potential: (1) Heritage Village residential area just east of the station; (2) Seminole Mobile Estates residential area a half mile WNW of the station; and the large OHSU-owned vacant parcel a mile west of the station and west of the OHSU research campus. The first two of these were eliminated from redevelopment proposals because they provide substantial supplies of badly needed affordable housing, which could benefit by improved access to the station. The large OHSU vacant parcel is too far from the Willow Creek Station and is instead best served by the nearby Quatama Station.

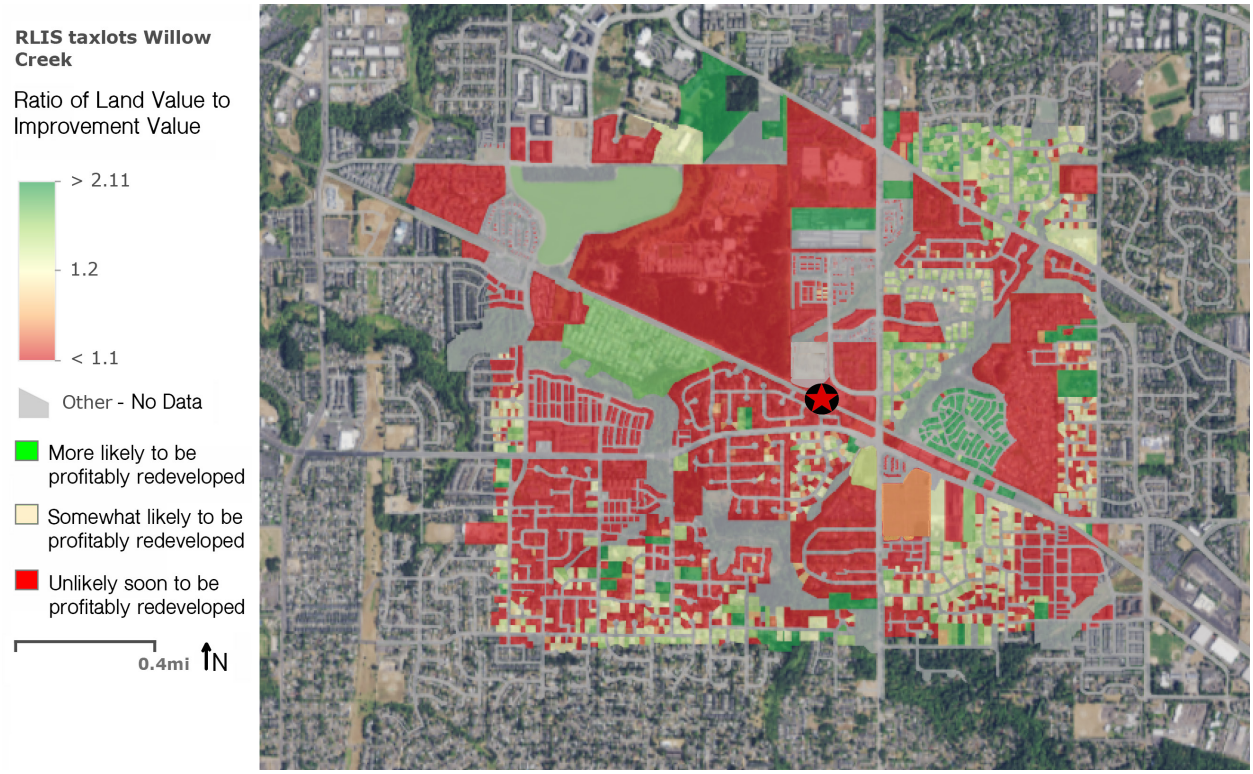


FIG. WC-1

Credit: Yeongseo Yu

Willow Creek Station's general concept diagram in Figure WC-2 identifies three larger areas of moderate redevelopment potential in Figure WC-1 for design development. The largest is the Panzer Nursery. This is a successful business of a type that could relocate outside the urban growth boundary. It might make a significant profit, and renew and update its capital assets, by relocating and selling their current property to a developer. The next largest is TriMet's current park-and-ride parking lot together with the vacant parcel that adjoins it to the north, which the agency is open to rededication to mixed use development. The older Goodwill Industries anchored mini-mall at the southwest corner of Baseline Road and 185th Avenue is a large parcel of moderately high redevelopment potential and is close to the station.

The student team also identified three areas of low redevelopment potential in the concept diagram (Figure WC-2) because they were needed to stitch together a complete and cohesive station area development. (1) The newer Stepping Stone townhouse development mall at the southeast corner of Baseline Road and 185th Avenue is densely packed behind fences at a very noisy location with poor ingress and egress access to those arterials when traffic backs up. This parcel is needed to connect between the station and the dense housing that could be developed in the Panzer parcel. (2) The long strip of small-scale industrial and storage uses along the north side of Baseline just east of the same intersection was selected for study as a potential long-term location for mixed use including many residential units close to the station. (3) The southeast corner of the forest land owned by OHSU near the station is proposed for purchase as a public park to complete the amenities offered by the transit-oriented design.

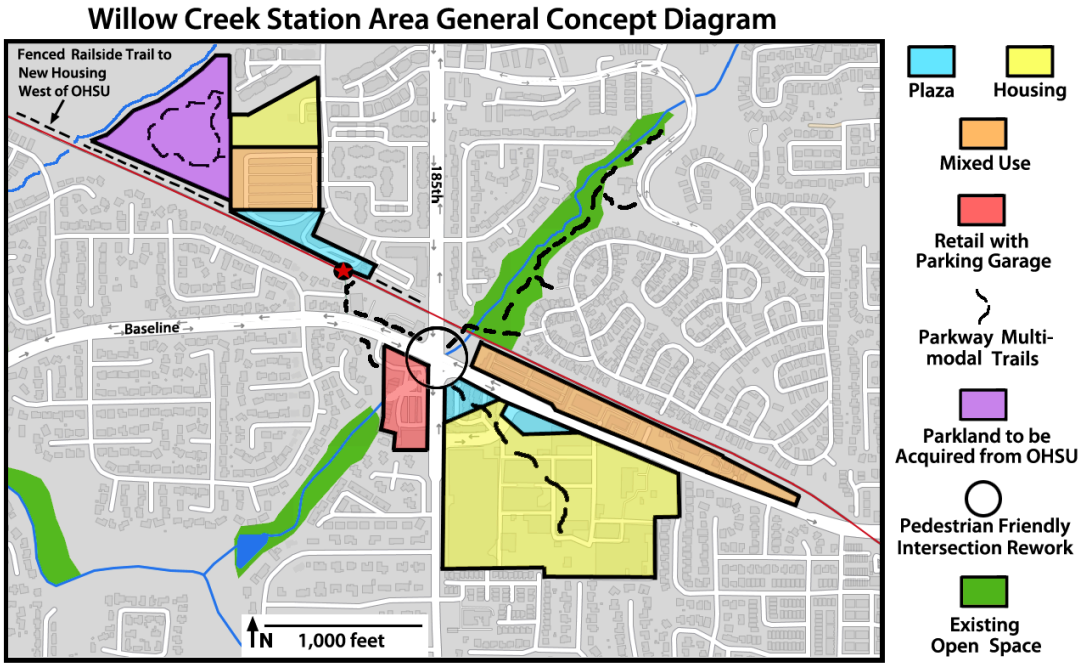


FIG. WC-2

Credit: Robert Ribe, Vanessa Taylor & Daniel Ramirez

Multi-modal pathways are proposed going both north and south along Willow Creek. These should include links to the end of streets adjacent residential neighborhoods and Heritage Village, which currently has no direct access to the station. These paths could provide pedestrian and micro-vehicles more direct, safe and attractive access to the station.

Residential areas near the station consisting of many small private-home parcels, newer multi-family buildings, and the new multi-story low- and moderate-income apartment buildings just southeast of the station were all considered inappropriate for redevelopment. These are well included in and served by the station area plan.

The new Portland Community College at Willow Creek is a key anchor of any TOD plan and could be reinforced in this role by sharing a public plaza hub with the station. The intersection at Baseline Road and 185th Avenue must be rebuilt to maximize pedestrian and micro-vehicle accessibility and safety, particularly between the Panzer housing development and the station, but the students were unable to address this design problem.

TEAM GOALS

- Willow Creek station area should substantially contribute to providing low-income housing, reducing homelessness and providing newly inclusive employment opportunities.
- Riparian forests should be retained and made more accessible.
- New residential developments should be well connected to the station.
- Micro-vehicle pathways should integrate the station area and connect it to surrounding areas.
- The station area should be unified by major plazas at its nodes to be reinforced by strong landmarks, districts and edges.

STATION AREA PLAN

Figure WC-3[6] is a figure-ground diagram of broad land uses for the proposed Willow Creek station area plan. Detailed designs within the colored areas are presented below. This diagram depicts important elaborations of the concept diagram in Figure WC-2:

- In the current park-and-ride lot, three podium buildings surround a semi-private plaza for residents and customers. These provide mixed-income housing and small-scale retail units very close to the station.

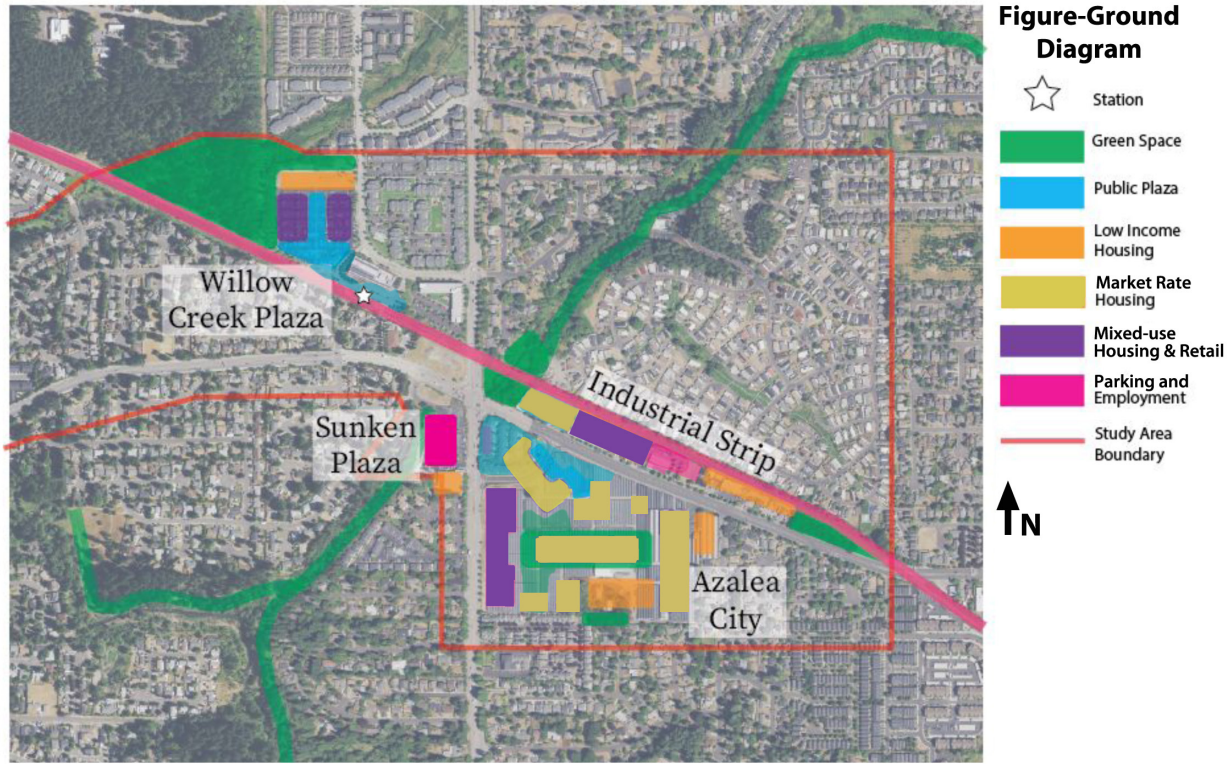


FIG. WC-3

Credit: Daniel Ramirez

- The nearby corner of the OHSU property is a forest park for use by the same residents and customers, and also PCC students and transit riders.
- An expanded 'Willow Creek Plaza" is proposed at the station as a social hub for the college and all who pass through the station.
- In addition to three floors of parking, the 'sunken plaza' site is proposed to include an employment development center on one level as a complement to the vocational education at the nearby PCC campus.
- The site of the Goodwill Store could be rebuilt as low-income housing.
- The Panzer and Stepping Stone site would include both market-rate and low-income housing, that might be named 'Azalea City'. It could include parking and community green spaces within and mixed use along 185th Avenue.
- A plaza could be built at the southeast corner of the central, big intersection as a social hub and landmark node for the station area. It could include an 'Azalea Pavilion' to commemorate the Panzer Nursery.
- A ride-sharing and transit hub with a plaza could be located along the north side of Azalea City along Baseline. [This is problematically far away from the station, but the established PCC and apartment buildings near the station do not readily allow space for this hub to be shoe-horned in near the station, unless much of the park-and-ride lot is devoted to this use.]
- The strip of mixed use along the north side of Baseline Road might emphasize low income housing, including micro-housing, along with service and employment opportunities for these residents.

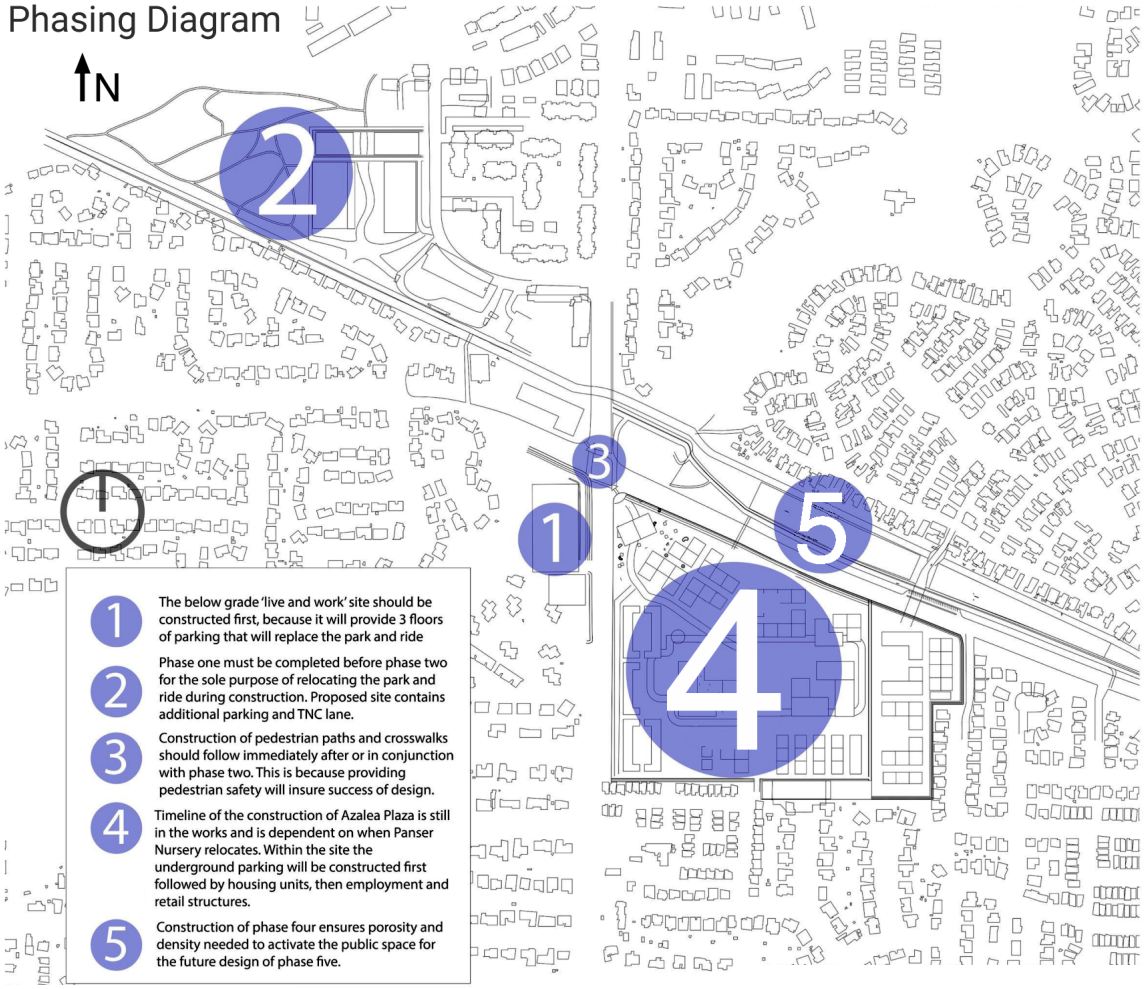


FIG. WC-4

Credit: Vanessa Taylor

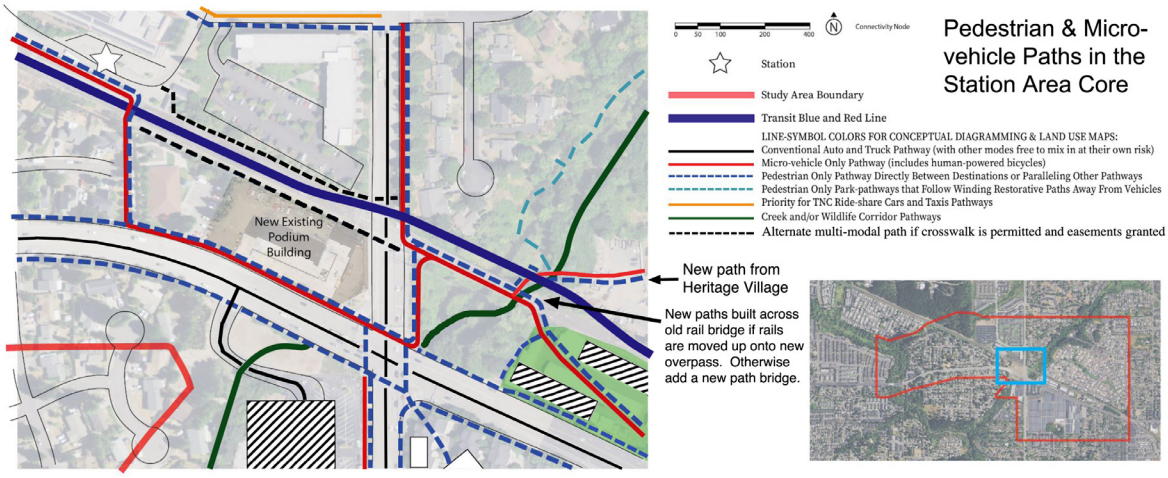


FIG. WC-5

Credit: Daniel Ramirez

Figure WC-4 shows a suggested phasing plan for implementing this station area plan. The new station parking structure would come first to clear the way for redevelopment of the current park-and-ride lot. The central intersection would be made as friendly as possible for pedestrians and micro-vehicles before residents of housing to be built on the Panzer site would begin crossing there to get to and from the station. The current uses east of that intersection along the north side of Baseline would likely be redeveloped last. It would likely take a while for them all to depreciate in value and all the owners be persuaded to sell their properties for redevelopment.

Connecting and integrating the station area plan at its central hub at the intersection of Baseline Road and 185th Avenue is challenging. Figure WC-5 illustrates potential solutions. Dedicated new micro-vehicle lanes or paths could be built into or next to185the Avenue and also on Baseline Road from the east. These would reach paths leading into the station, as described below.

A wide multi-modal path could be built from the southwest corner of Heritage Village to the hub at the big intersection. This would go through the parcel that is now used as a vehicular storage business. This path would need to cross over the creek on a new bridge or it could use the bridge that currently carries the tracks over the creek, if a new overpass were built for the tracks over 185th Avenue.

Locating a right-of-way for a multimodal path from the big intersection to the station is problematic. The main option shown in Figure WC-5 would be to have the wide sidewalk along the south edge of the new podium building on Baseline Road carry both pedestrians and micro-vehicles, which would be a 'tight fit' but bring customers to the businesses there. It would then go north to the station through the existing pedestrian alley as shown. Two other options are shown on Figure WC-5. These would entail a crosswalk across 185th Avenue near the tracks. This would probably not be safe given its proximity to the intersection and frequent backups of southbound traffic there behind the signal at Baseline or behind the gates at the tracks. The two alternate rights-of-way shown in Figure WC-5 would require easements across private parcels and a fence between the path and the TriMet right-of-way. Other solutions could entail multi-modal overpasses across 185th Avenue and/or Baseline Road. These were not proposed due to their expense and because pedestrians and non-electric bicyclists might prefer to not use them to avoid climbing.

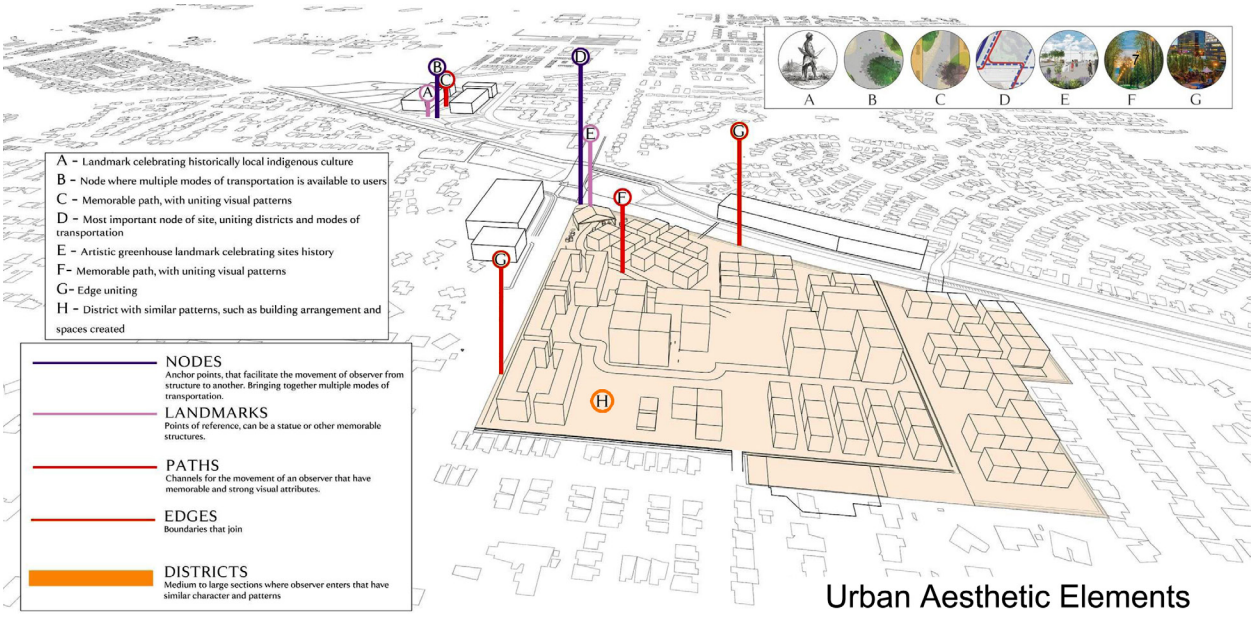


FIG. WC-6

Credit: Vanessa Taylor

The main urban design elements of this plan that would contribute to urban aesthetics are illustrated in Figure WC-6. The Panzer and Stepping Stone sites could be an identifiable urban district with unifying architecture, landscape architecture, furnishings and visually strong edges. A plaza at the southeast corner of the intersection of Baseline Road and 185th Avenue would be a central, visually dominant node for the station area. Within that space, a large atrium Azalea Pavilion would be the primary landmark. The Willow Creek Plaza between the station, PCC and the new mixed use development (in the former parking lot) would be another node containing a landmark commemorating local Native Americans. The paths leading into both new housing developments could be richly and distinctively designed.

DESIGN DETAILS

Willow Creek Station Center

The student team's proposed Willow Creek Station Center design is illustrated in Figure WC-7. It shows how the Willow Creek Plaza would mediate between the station, PCC and the new mixed use buildings to the north. This plaza would be a public hub of the station area and a detailed plan is offered in Figure WC-8. This plaza space would continue northward into a semi-public plaza 'hallway' between the podium buildings with small business storefronts on both sides with covered sidewalks (Figures WC-7 and WC-8). This space would continue as a smaller outdoor hallway between the two low-income apartment buildings back to a private outdoor space in back for the residents (Figure WC-7). (This space north of the low-income residential buildings could be used to enlarge those buildings if needed to help the project 'pencil out'.)

As further illustrated in Figure WC-7, a pedestrian and micro-vehicle boulevard is proposed flowing northwest from Willow Creek Plaza. It would use a new right-of-way that would be acquired from OHSU with fences along both sides to keep users out of both the TriMet rail channels and the OHSU

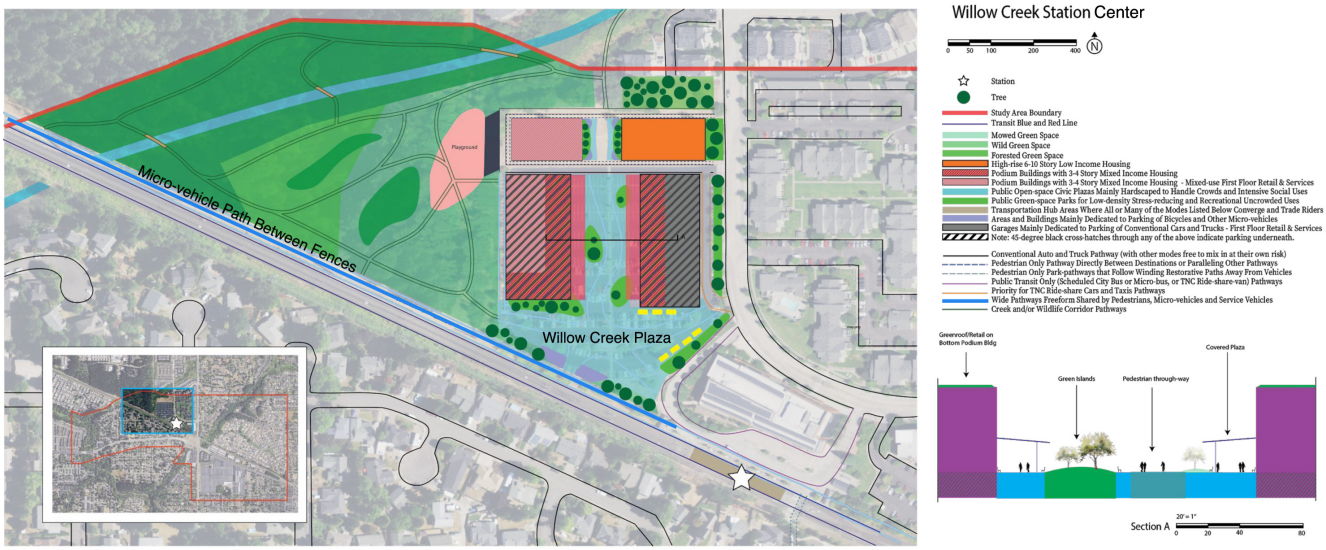


FIG. WC-7

Credit: Daniel Ramirez

FIG. WC-8

Credit: Daniel Ramirez

property. There would be underground parking underneath all or part of this newly constructed area with access from the street along its east edge. A design for the parkland west of the buildings is also sketched in Figure WC-7. It suggests a variety of social versus natural intensities of recreation and a playground with a pastoral pattern of paths throughout. The students' park design there crosses over the creek, but negotiations with OHSU for acquisition of this land could modify this extent.

Azalea City

The plan for the Azalea City portion of the Willow Creek Station Area is detailed in Figure WC-9. Most of the buildings are not podium types but instead residential only and 6 to 10 floors high. This new development would stand out and above the Tualatin Valley urban landscape with higher density than found anywhere else to date. It would contribute a great deal of new housing to the region and station area and much of it is proposed to be low-income. The whole of Azalea City would be pedestrian emphasis with extensive underground parking and limited vehicular access at ground level. The underground transportation system might allow residents to reach the elevator and stairs for every building and allow for garbage collection and service vehicles to reach all buildings. An above ground garage site is offered at the southeast edge of the plan. (The very large number of residential units (not calculated) in this development and the corresponding number of TriMet riders might justify overhead viaducts for pedestrians and micro-vehicles over the major arterials to Willow Creek station.)

FIG. WC-9

Credit: Vanessa Taylor

The station area central hub plaza with its grand, glass Azalea Pavilion is shown at the northwest corner of the plan in Figure WC-9. A wide multi-modal path flows through the pavilion and into the 'village green' at the center of Azalea City. The same path leads from the village green toward Willow Creek Station. Another plaza is offered along the north edge next to a ride-sharing hub. All the plazas along Baseline Road could harbor food carts and pop-up stores, including some for low-income peoples' business startups.

The spaces between the buildings are proposed to include a single, integrating grand circular plaza for running, walking, parading, and emergency access. Other amenities include pastoral parks, a playground, dog park, greenhouses, a micro-vehicle garage, amphitheater and extensive planting areas which would be installed in much of the grey areas outside of the indicated dash-line paths in Figure WC-9. Solar collectors are suggested on top of many of the buildings. (The number of residential units contemplated in this plan might justify a swimming pool or playfields and ball courts.)

A view out from under the Azalea Pavilion into the central hub Azalea Plaza is shown in Figure WC-10. This kind of space is vital to fostering the social life and beautiful identity of the station area. The view is looking east with Baseline Road at the left-hand edge. Events and markets could be held inside the pavilion out of the sun and rain. (It is too noisy here for concerts so there is an amphitheater not far away, as shown in Figure WC-9.) The curving pathway that goes from lower-left to upper-right leads to the village green at the center of Azalea City. The brown boxes in the background are pop-up stores for low-income peoples' start-up businesses.

FIG. WC-10

Credit: Vanessa Taylor

Industrial Strip along Baseline Road

The students' design for the 'industrial strip' space between Baseline Road and the TriMet tracks evolved. The initial concept (Figure WC-2) was that mixed use with housing would be a more profitable use than existing uses to justify redevelopment. The next concept (Figure WC-3) was to mix in some low-income housing and employment, perhaps by retaining some parcels in their current use. Figure WC-11 illustrates the students final concept, which would be financially challenging to implement. It proposes a combination of uses aimed at alleviating homelessness. An area for transitional housing, probably various micro-houses, could relate to training jobs in an adjacent warehouse or other employment activity which might sell products on site. Low-income housing with parking underneath completes the concept with small parks bookending the design.

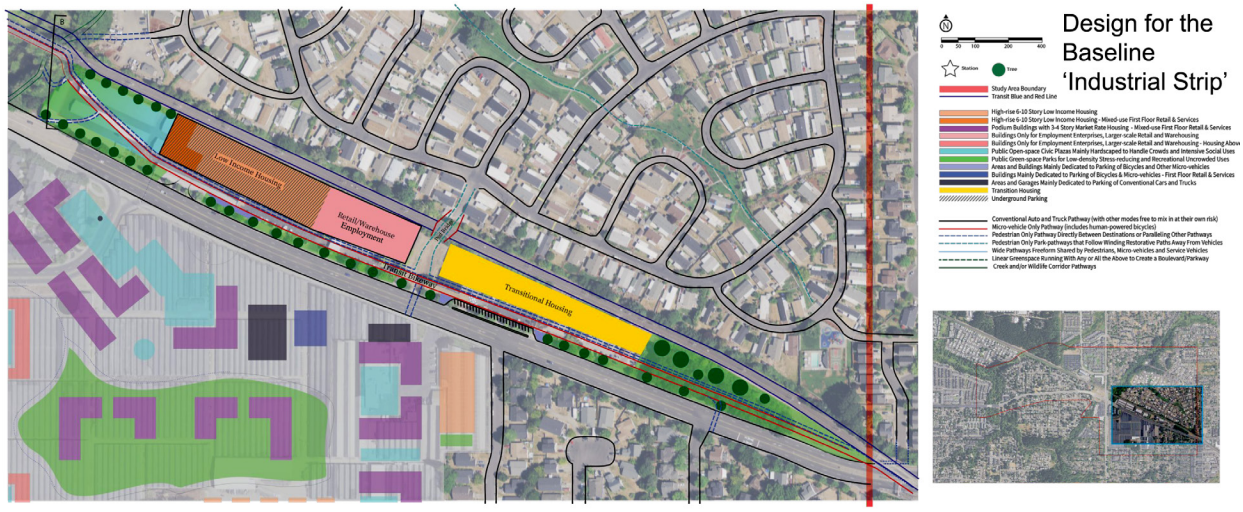


FIG. WC-11

Credit: Daniel Ramirez

Elmonica Station Area

BASIC LAND USE ANALYSIS

The map of ratios of land values to improvement values in Figure EM-1 shows more financially viable redevelopment areas in green and least viable areas in red. Moderately viable areas appear in yellow and slightly viable areas in orange. There are three areas adjacent to the station with redevelopment potential (Figure EM-2). (1) The existing TriMet park-and-ride lot (Figure EM-3) which might also include the parcel to the northeast of it made up of a lawn surrounded by trees, which appears to be associated with the neighboring apartments. (2) The triangle of parcels northeast of the station which are in unincorporated Washington County (Figure EM-4). There is vacant land within these parcels and their property value ratios indicate high redevelopment potential. (One of these parcels is now in pursuing reuse as housing.) (3) Two parcels southeast of the station have moderate redevelopment potential and were vacant in the most recent data available to the class, although the western one may be a brown-field (Figure EM-5).

Elmonica Station's general concept diagram in Figure EM-2 identifies mixed use with housing for the portions of all three of the above areas nearest the station and housing only for the portions further from the station. The half-acre parcel at the northwest corner of the redevelopment area is proposed for retail because a larger grocery store was not found by the students within a mile of the station. Figure EM-2 also shows a system of multimodal paths. One path would reach from the station up to the existing path under the power lines two blocks northeast of the station. Another would follow the creek away from the station to the southwest to enable pedestrians and micro-vehicles to travel safely and directly to and from residential neighborhoods there.

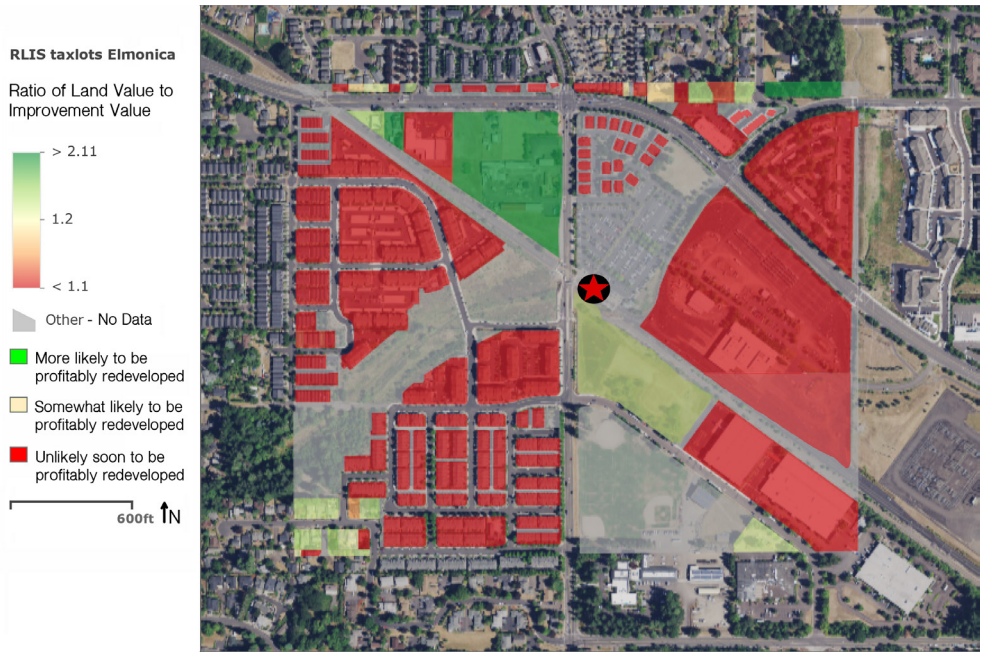


FIG. EM-1

Credit: Yeongseo Yu

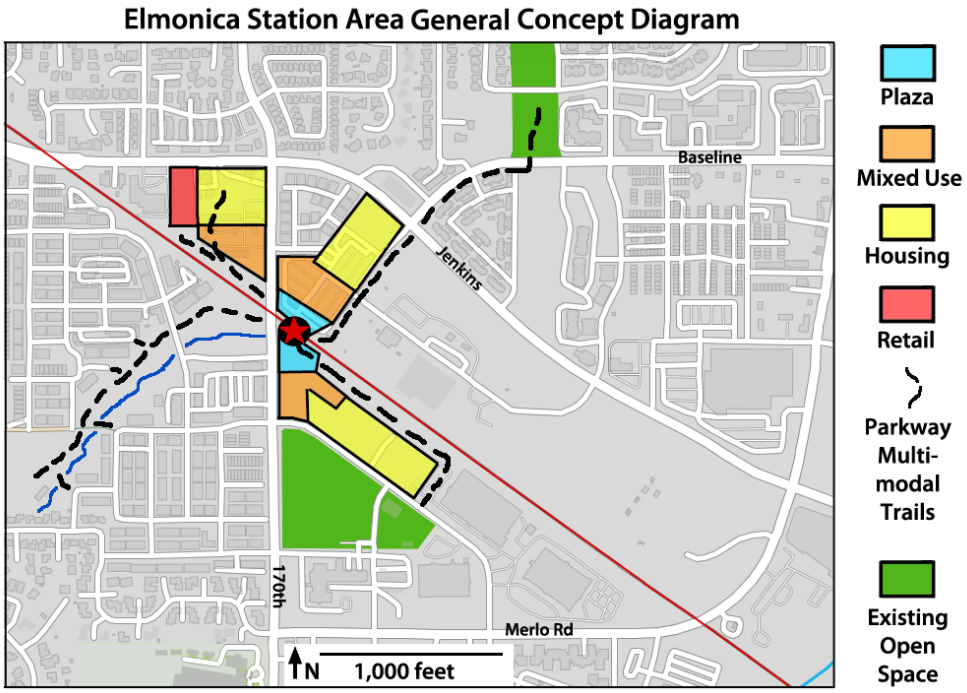


FIG. EM-2

Credit: Robert Ribe & Sharon Fu

FIG. EM-3

Credit: Sharon Fu

FIG. EM-4

Credit: Sharon Fu

FIG. EM-5

Credit: Sharon Fu

TEAM GOALS

- Elmonica station area should safely and beautifully integrate diverse modes of transportation with the station.
- Movement pathways should be most comfortable and safe for pedestrians and disabled people.
- Public spaces, like plazas and mini-parks should feel like the 'skeleton' of the station area, and not the streets or the buildings.
- All outdoor spaces should be richly planted with trees and offer other shelters from rain and sun.
- Plazas and mini-parks must strongly relate to shopping and transit hubs and foster rich and diverse public social activities
- Low-income housing must be mixed in with market-rate housing.
- Most parking should be underground or in garages on the periphery of the station area.

STATION AREA PLAN

The proposed Elmonica station area plan is presented in Figure EM-6 and refines the concept diagram in Figure EM-2. It is anchored by a public plaza on both sides of the station surrounded by mixed-use podium buildings with shops on the first floor where light rail riders can purchase items and services as they leave or wait for trains. A garage for micro-vehicles is close to the station. A larger retail space is offered just a bit further back to the north of the plaza with housing above and parking underneath. Most of the remaining new buildings further away from the station are just for housing and typically have fewer floors, and more low-income housing, with distance from the station. All sets of residential buildings have small parks set within them and all these have adjacent shops on the first floor of mixed-use buildings that abut the parks.

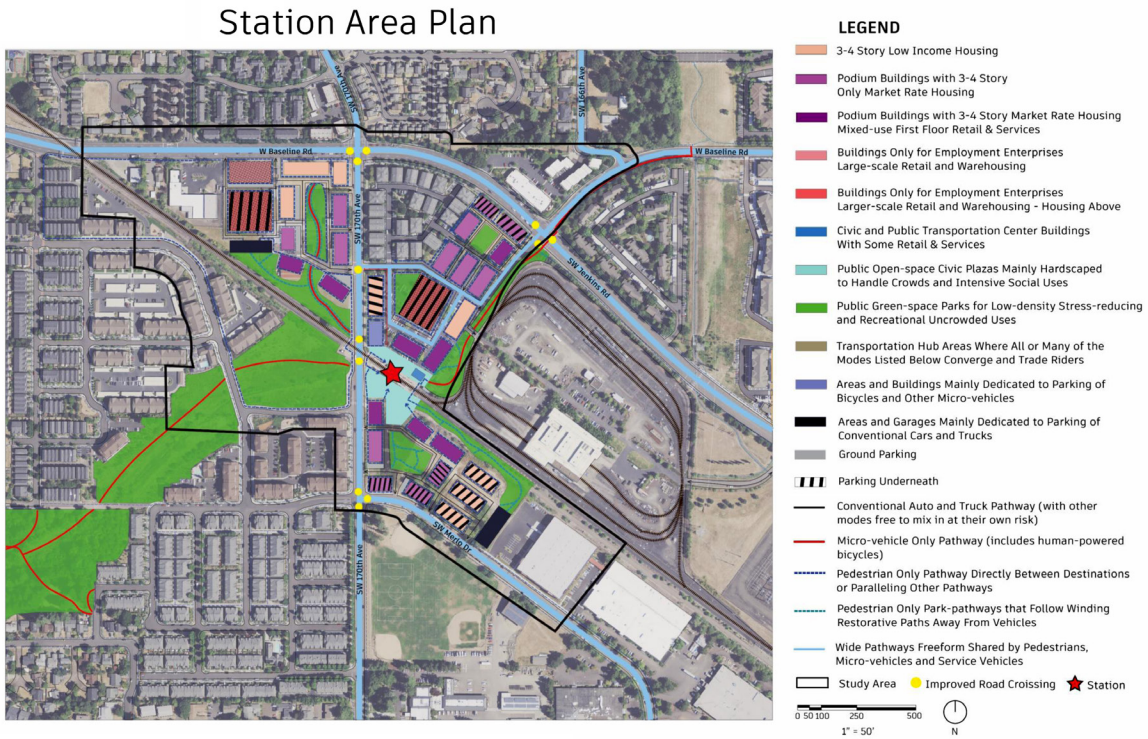


FIG. EM-6

Credit: Sharon Fu

There is a garage for cars in each of the two directions away from the station. Many of the residential buildings have parking underneath. A parkway on both sides of a multi-modal path leads from the station up to the northwest set of residential buildings. Other multi-modal paths are placed just as contemplated in the diagram in Figure EM-2. The northbound of these is a tight fit. It is first placed up against the fence surrounding the TriMet maintenance and operations yard and then against the southeast edge of Baseline Road where trees may have to be removed to make space for it.

Thematic maps in Figures EM-7 through EM-12 further clarify the proposed Elmonica station area plan.

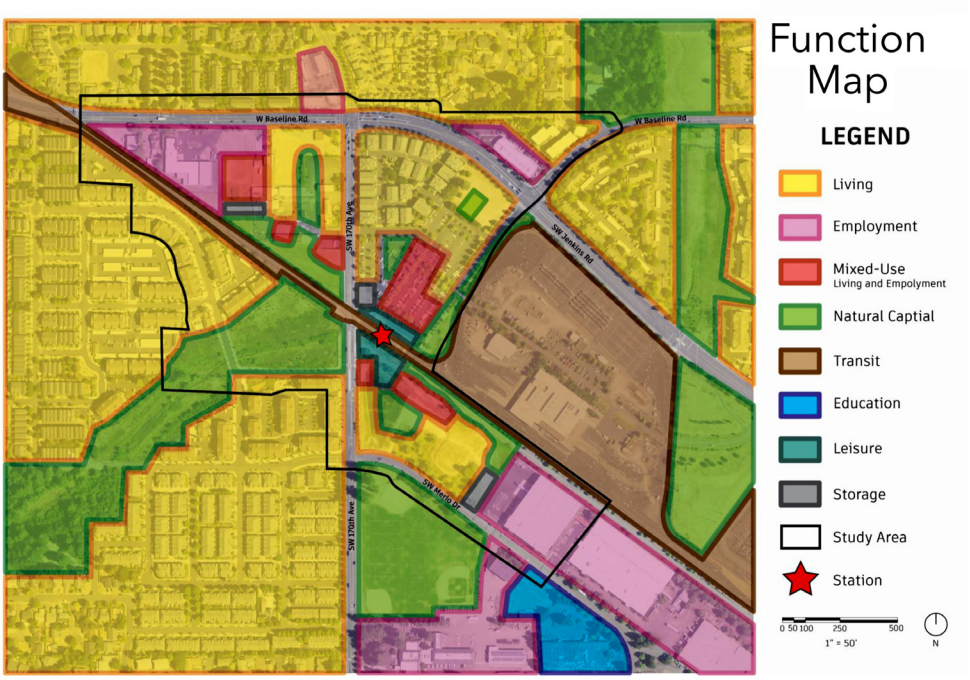


FIG. EM-7

Credit: Sharon Fu

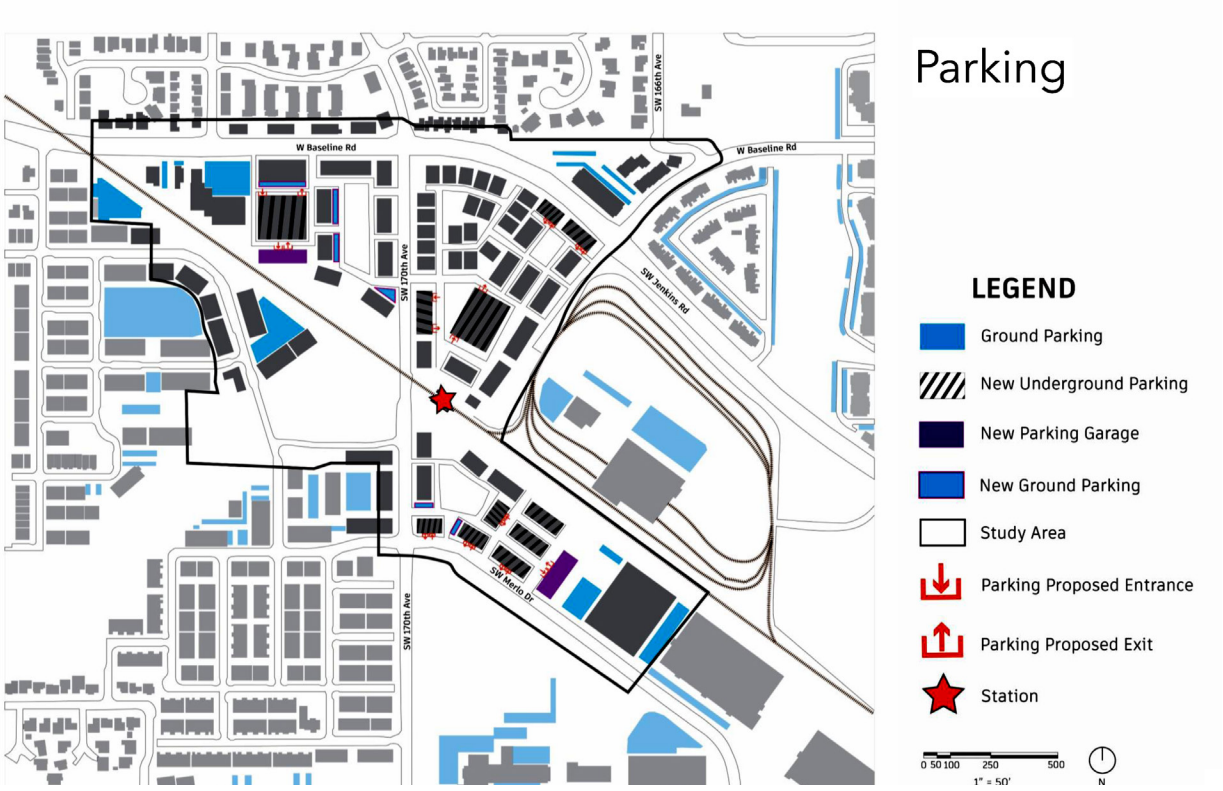


FIG. EM-8

Credit: Sharon Fu

FIG. EM-9

Credit: Sharon Fu

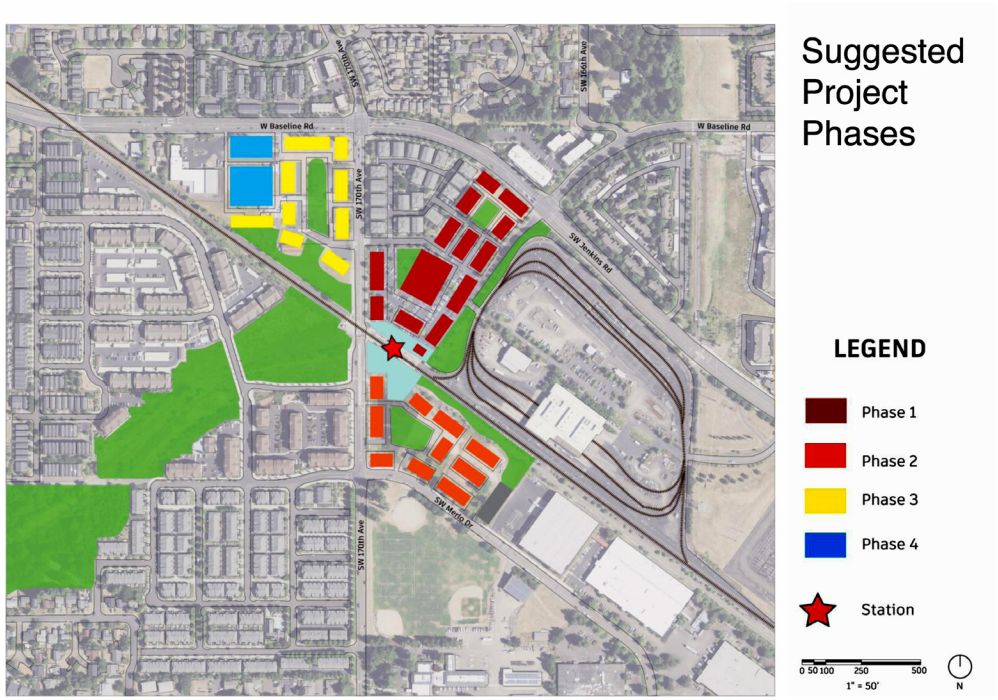


FIG. EM-10

Credit: Sharon Fu

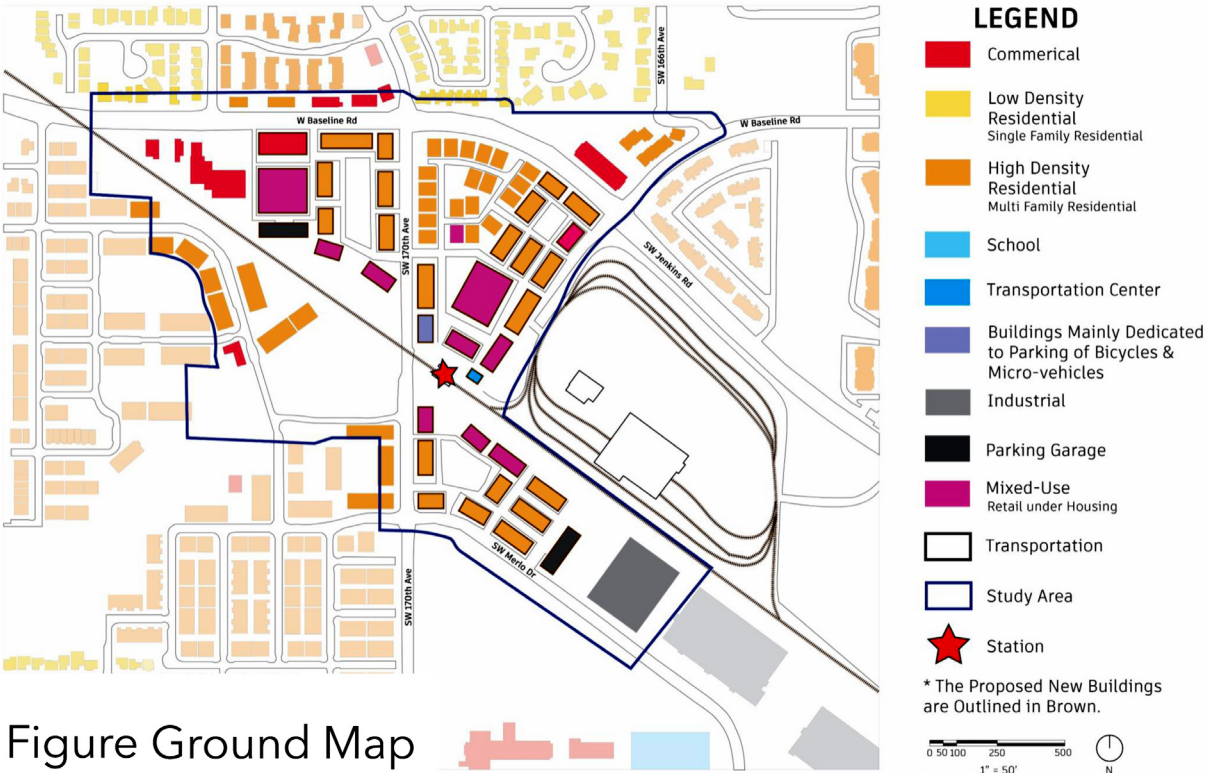


FIG. EM-11

Credit: Sharon Fu

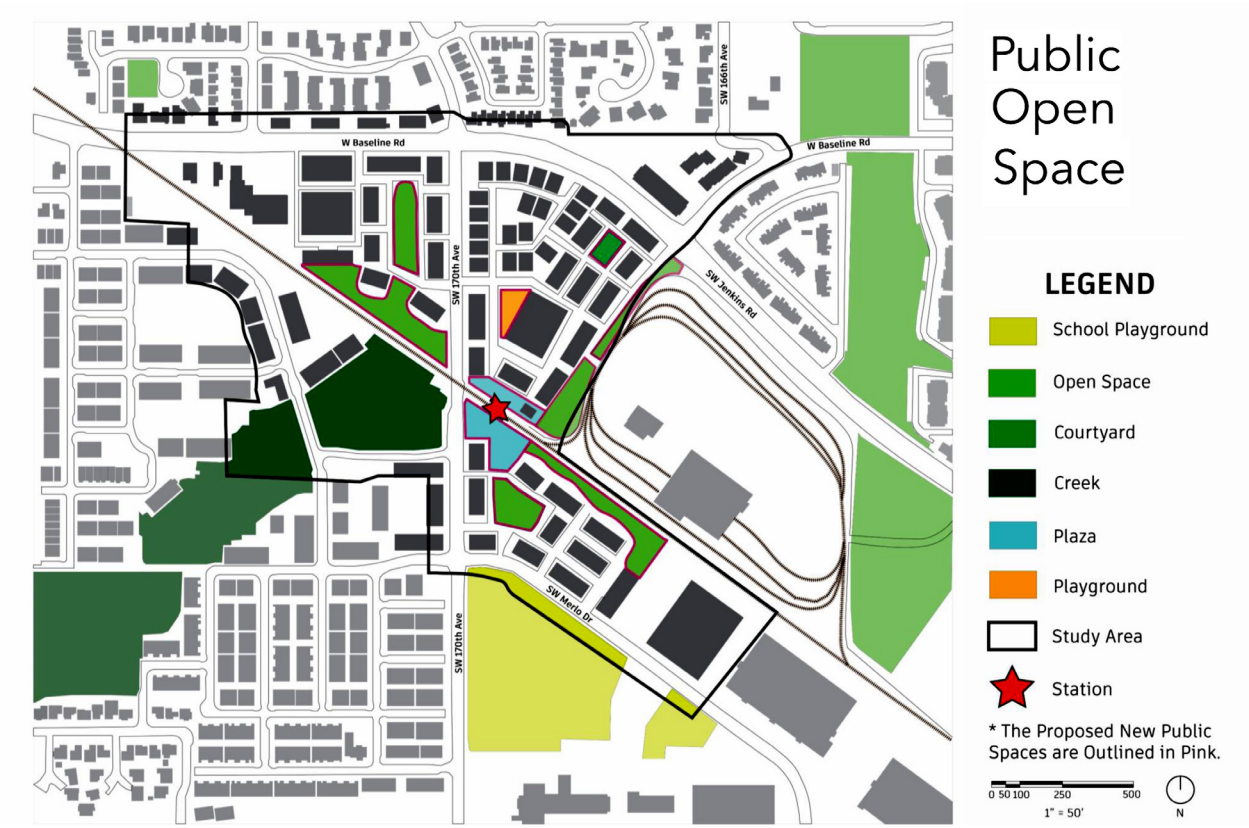


FIG. EM-12

Credit: Sharon Fu

DESIGN DETAILS

The heart of the proposed Elmonica station area design is the public plaza surrounding the station (Figure EM-13). On both sides of the station platforms is an open area for chance meetings, waiting, or scurrying to and from the shops that surround the plaza. Each side also has a water feature. A snaking pool on the south side flows from a fountain to the tail and embraces a stage. The splash pad on the north side would need a barrier between the children at play and the tracks (not shown). Trees and shelters provide shade and rain protection. Tables for working, talking and eating are provided and some with umbrellas. An information center and bicycle/micro-vehicle barn frame the north plaza.

The larger core area that surrounds and includes the station plaza is designed to be full of life and diverse activities, as illustrated in Figure EM-14. The activity areas foster eating, playing and other flexible uses in overlapping and close proximity to bring the whole core into a life of social intensity and vibrancy. These areas are always located near shops at the base of mixed-use podium buildings. A sound wall might be built along the northeast edge of the core area if noises from the TriMet maintenance and operations yard are problematic.

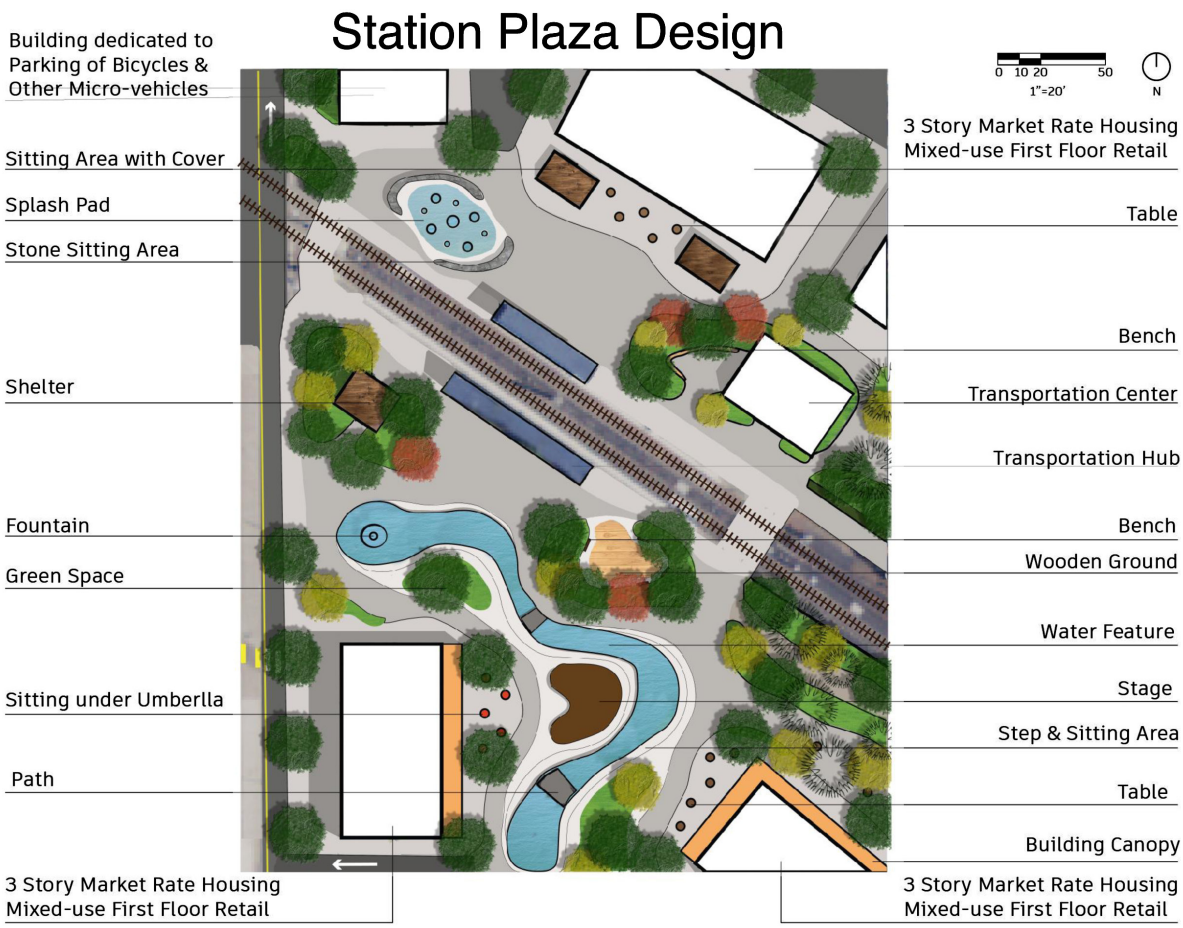


FIG. EM-13

Credit: Sharon Fu

Figures EM-15 through EM 20 illustrate a closer look at designs for the three redevelopment areas surrounding the station. The plans offer an idea of how tree massing might make these places very green and beautiful. The plans also illustrate the location and categories of different pathways and enhanced pedestrian crossings. There is a yellow section line in each plan drawing, and a corresponding illustrative section-elevation is found in the subsequent figure. These section drawings illustrate the relationships between uses within the buildings and the quality of adjacent outdoor recreational spaces and vehicular uses.

FIG. EM-14

Credit: Sharon Fu

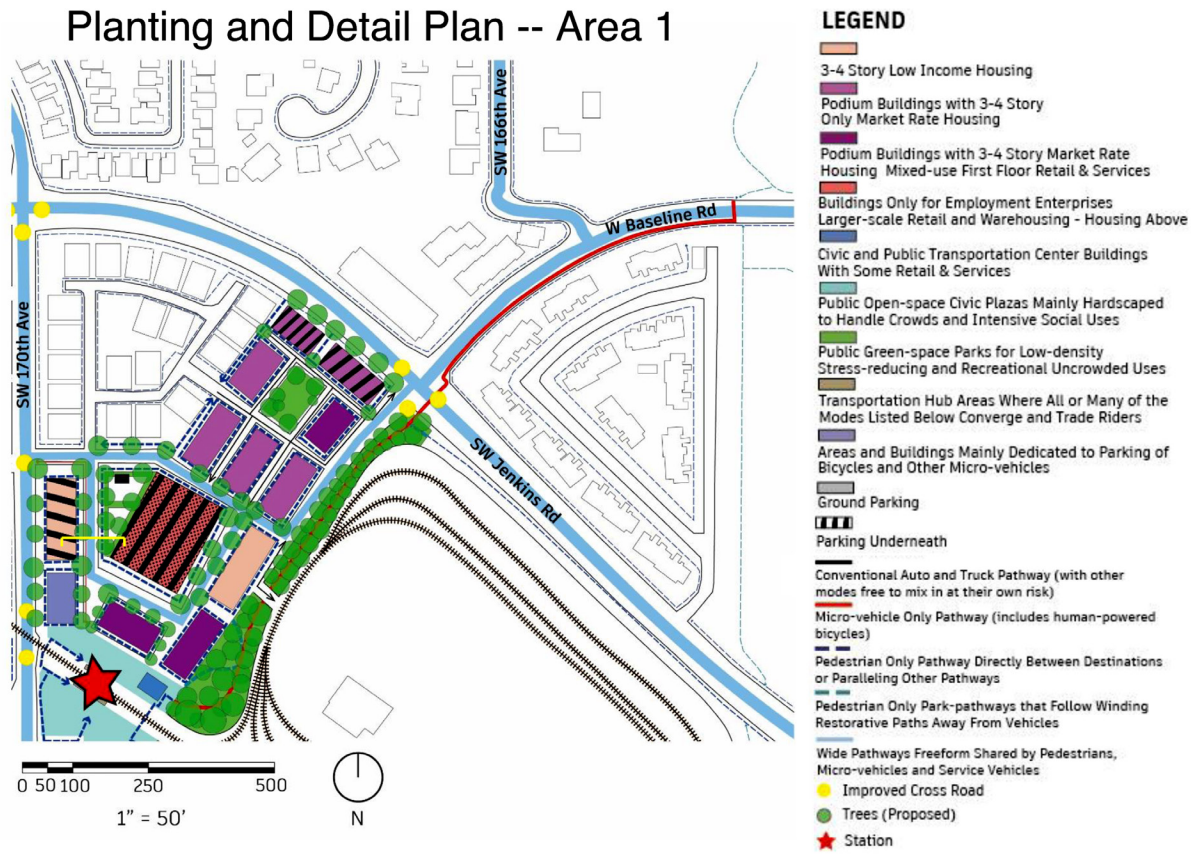


FIG. EM-15

Credit: Sharon Fu

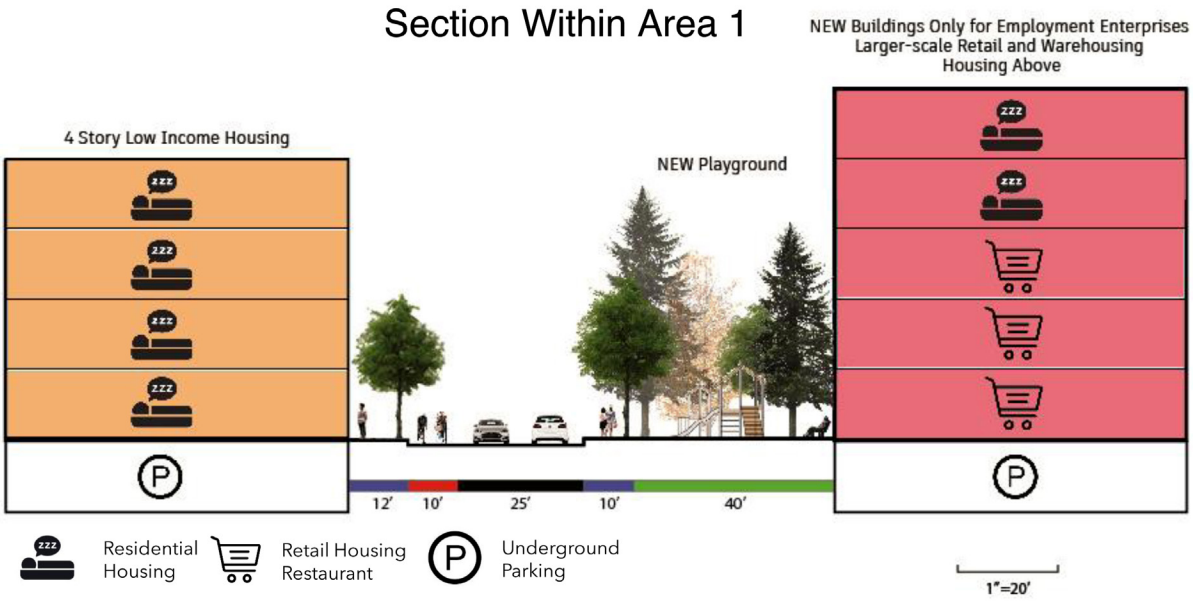


FIG. EM-16

Credit: Sharon Fu

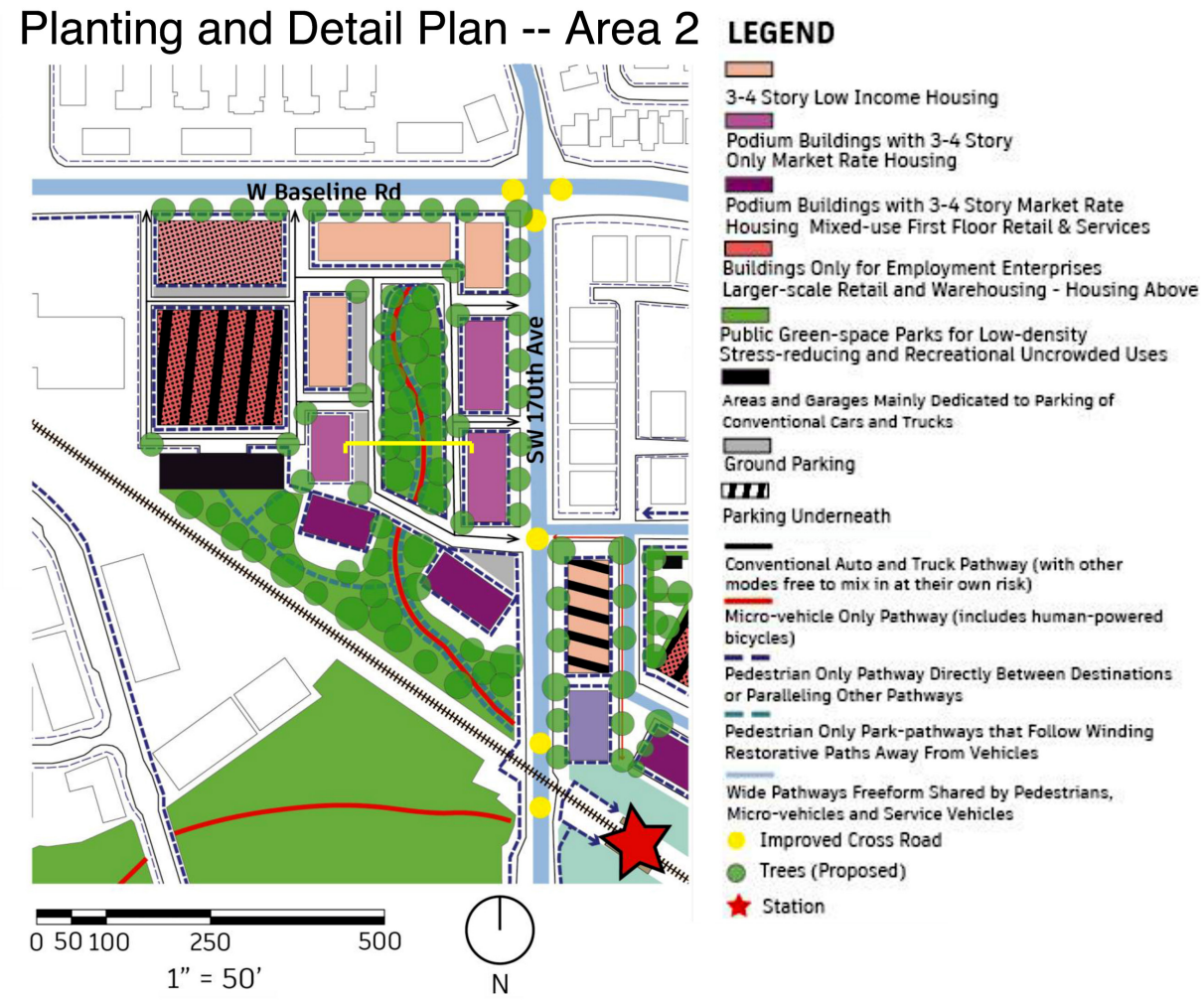


FIG. EM-17

Credit: Sharon Fu

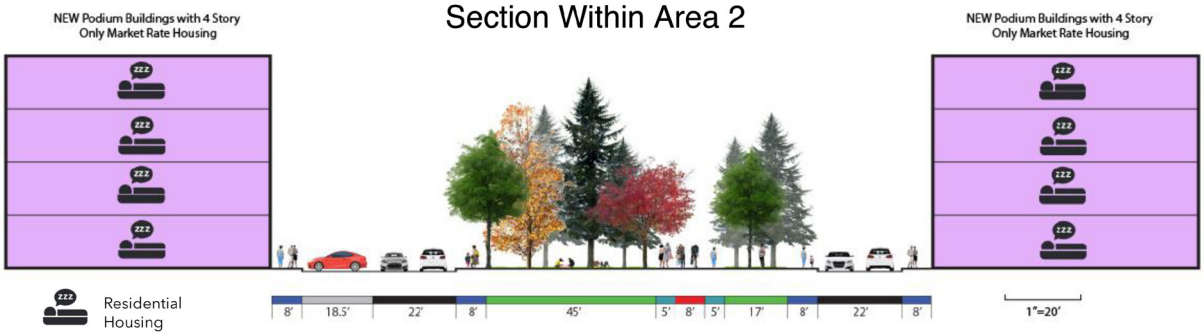


FIG. EM-18

Credit: Sharon Fu

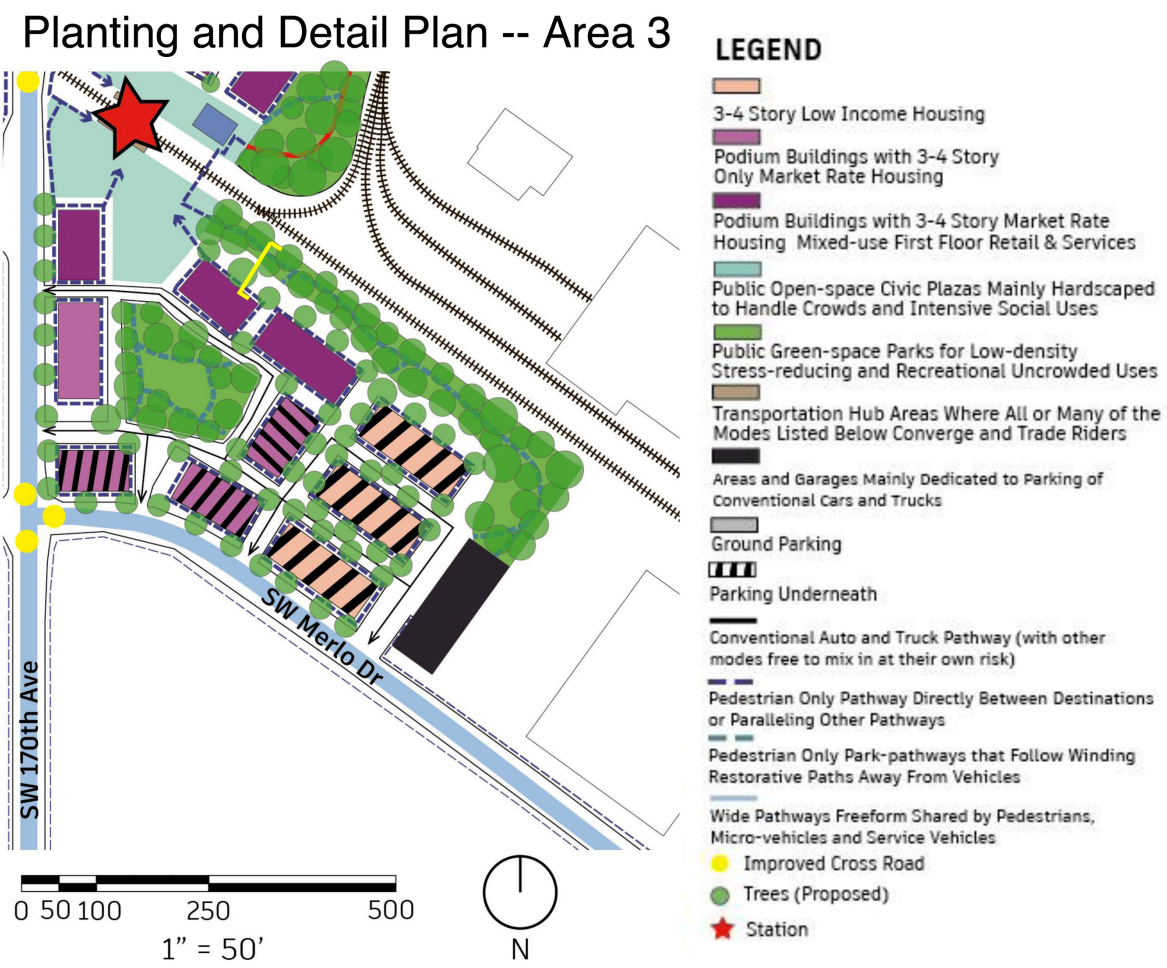


FIG. EM-19

Credit: Sharon Fu

FIG. EM-20

Credit: Sharon Fu

Millikan Way Station Area

BASIC LAND USE ANALYSIS

The Millikan Way station area is very different than the others in this study. It consists of relatively new and thriving corporate campuses and nearby successful land uses that serve their employees and regional populations. There are consequently very few parcels with significant redevelopment potential (Figure MK-1). The development potential in this station area is instead revealed by the air photo in Figure MK-2. There are extensive parking lots which may not be needed in the future. High technology companies are becoming more global, and are evolving toward more distributed research and production, more administrative work from home, and much of their research and production is becoming automated. The class' postulate was that substantial portions of these parking lots, and possibly also portions of the campus' green landscapes, could be available for redevelopment (Figure MK-3). This change could come to comprise a high-density, mixed-use station area like that sketched in Figure MK-4.

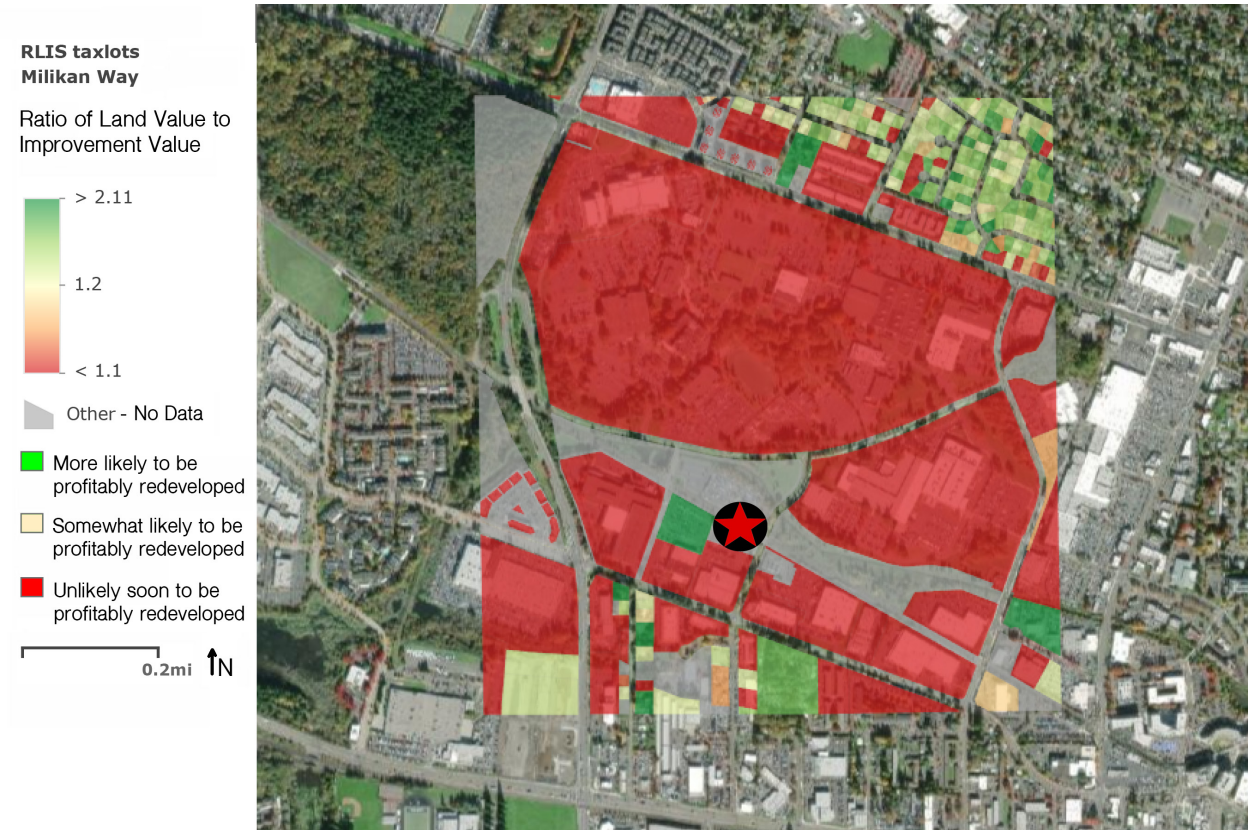


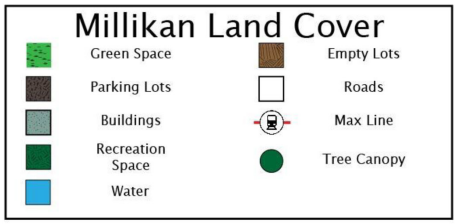
FIG. MK-1

Credit: Yeongseo Yu

Millikan Way Station Area Conditions in 2019 Air Photo

FIG. MK-2

Credit: Connor Iverson



Key Points:

- ≈50-60% Parking Lots & Roads
- Good Green Space [along creek and within campus lawn & trees]
- Poor Stormwater Management [retention ponds on low ground]
- Development Issues [Sormwater impacts of new buildings need to be mitigated]

FIG. MK-3

Credit: Connor Iverson

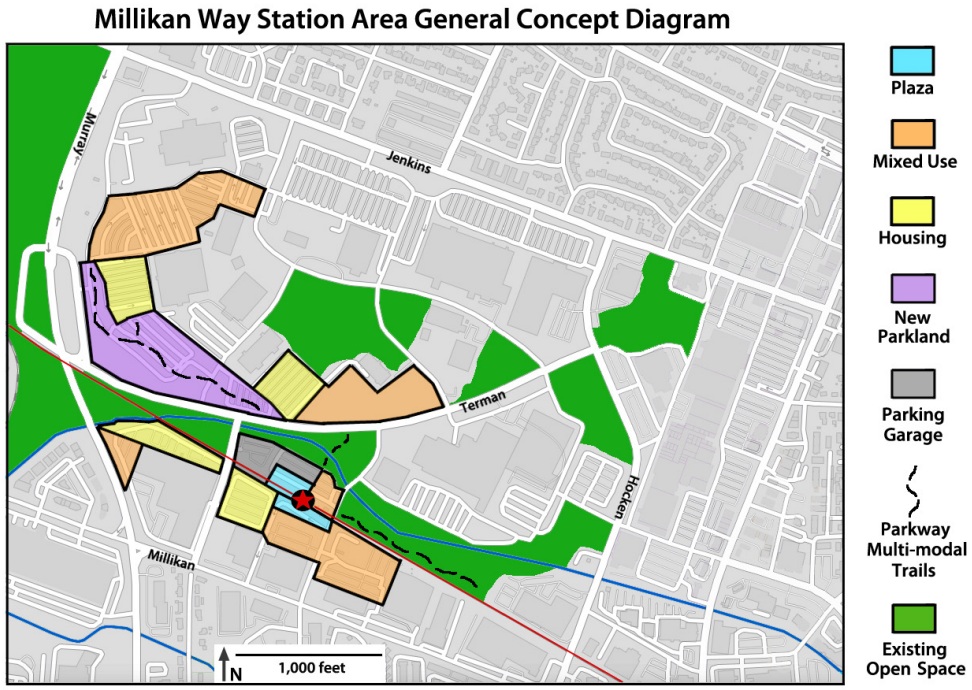


FIG. MK-4

Credit: Robert Ribe, Brooke Ridgway, Grant Olson & Connor Iverson

TEAM GOALS

- The new station area should retain the campus aesthetic in the area north of the tracks.
- The naturalistic Beaverton Creek corridor should be strengthened both as a riparian resource that parallels the tracks and by the introduction of adjacent parks.
- The big-box parking lots near the station to the south should be replaced with high-density housing and mixed uses.
- The big-box anchor retail south of the tracks should gain more small-scale, synergistic retail nearby.
- Pedestrian and micro-vehicle access throughout the station area should be optimized first before other circulation systems.
- The stormwater management systems within the campuses are obsolete and need to be replaced with more effective and innovate solutions.
- A landmark should be placed north of the station where the center of gravity of the station area intersects Beaverton Creek.

The diagrams in Figures MK-5 and MK-6 helped the team brainstorm ways of spatially organizing these goals.

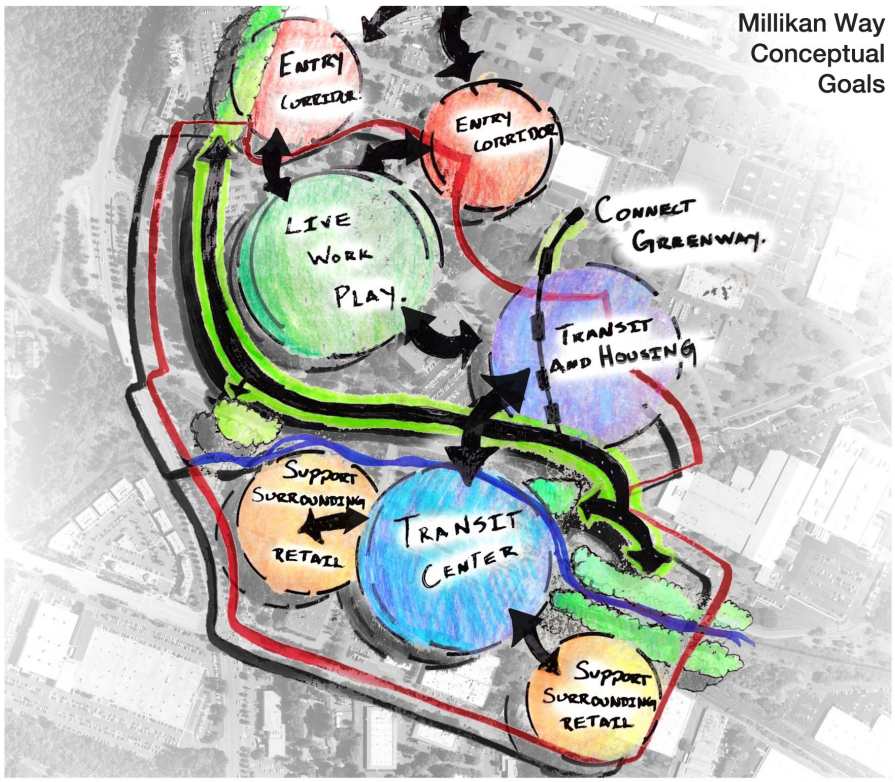


FIG. MK-5

Credit: Grant Olson

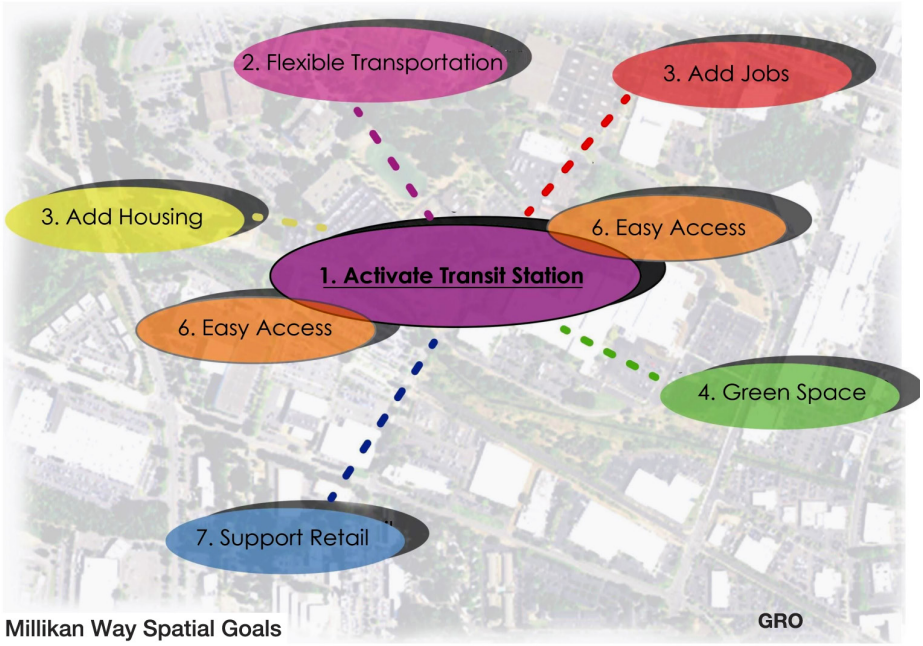


FIG. MK-6

Credit: Grant Olson

STATION AREA PLAN

The student team's proposed station area plan is mapped by landscape functions in Figure MK-7, which can be compared to the current landscape functions in Figure MK-8. The footprints of proposed new buildings are in white and the 'ground' colors that surround them indicate their broad use categories.

North of the tracks, extensive new public parkland is proposed along Beaverton Creek northwest of the station replacing parking lots where developers would likely prefer to build housing. This park proposal includes a more socially intensified park nearer the station to the north across the retained park-and-ride lot (pink in Figure MK-7). Two large new employment buildings are contemplated further north of the station. 14 new mixed-use residential and retail buildings are dispersed across the campus areas currently in parking lots and surrounding the Tektronix track. Five housing structures are also placed within a current parking lot site. Large parking lots in the northern and eastern reaches of the corporate campus area are retained to serve Tektronix, Nike and other campus tenants, as are a few lots nearer the station.

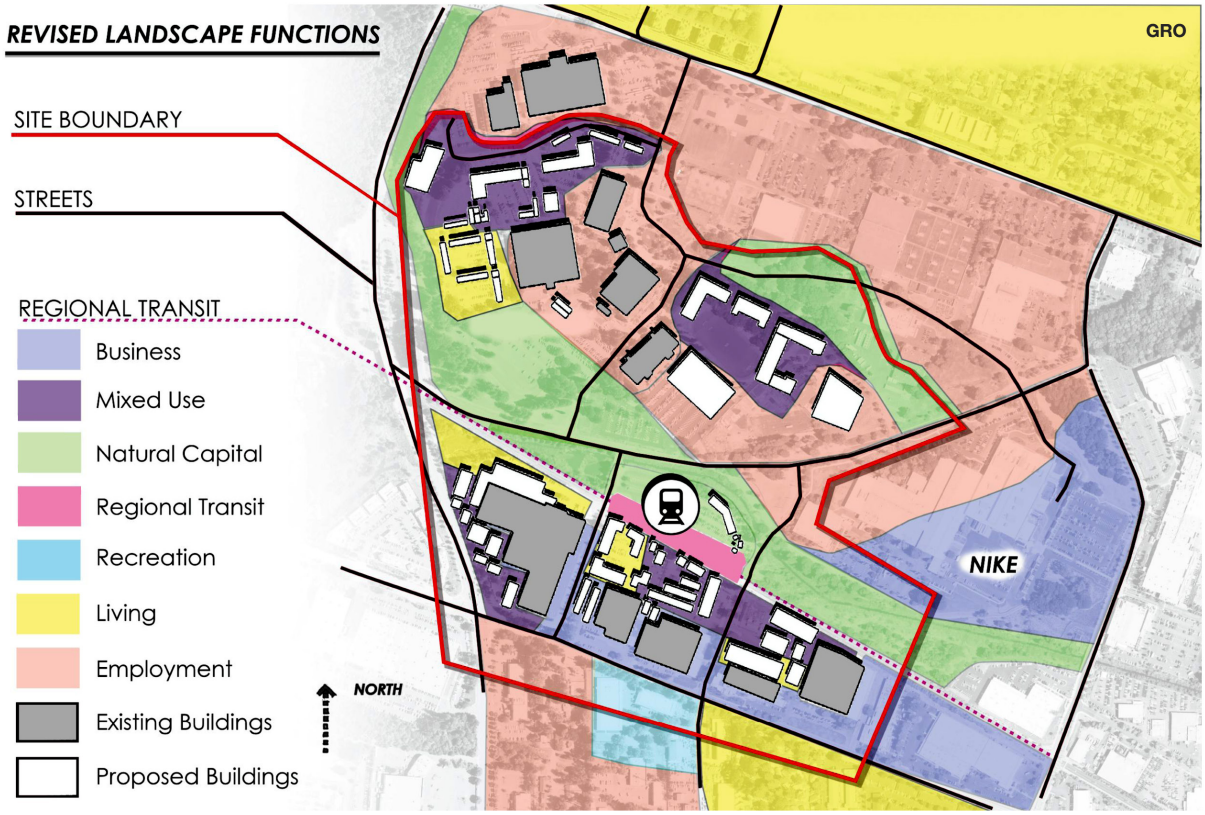


FIG. MK-7

Credit: Grant Olson

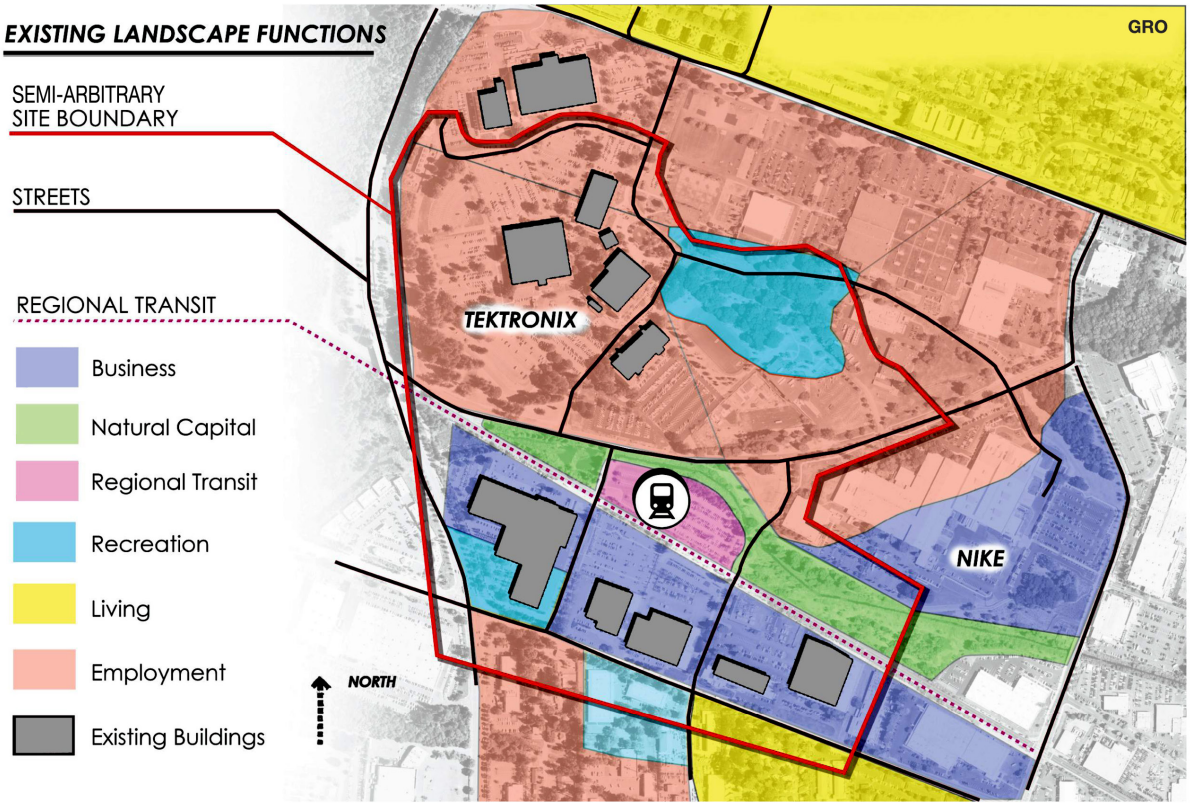


FIG. MK-8

Credit: Grant Olson

South of the tracks, dense housing and mixed-use are proposed to fill the parking lots near the station but with spaces between for plazas and parking. The parking lot west of 'The Courts In Beaverton' building is proposed to be filled with small retail buildings bounding newly created narrow pedestrian streets and micro-parks.

The overall circulation plan for the Millikan Way station area is shown in Figure MK-9. It illustrates the primacy of pedestrian and micro-vehicle paths. Note how they travel through the large park area between the many housing units in the northwest corner of the plan and the station. The students' proposed phasing plan is offered in Figure MK- 10. It prioritizes density near the station, followed by replacing large parking lots. The Tektronix campus core and micro-retail could be the last to change.

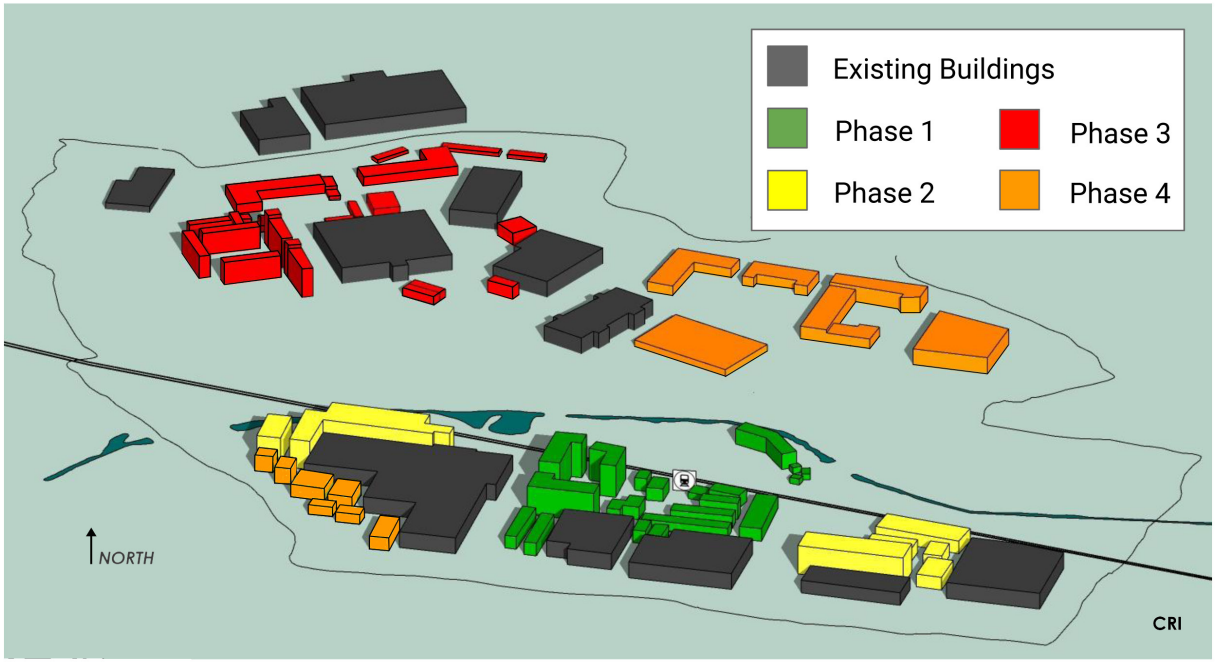


FIG. MK-9

Credit: Grant Olson

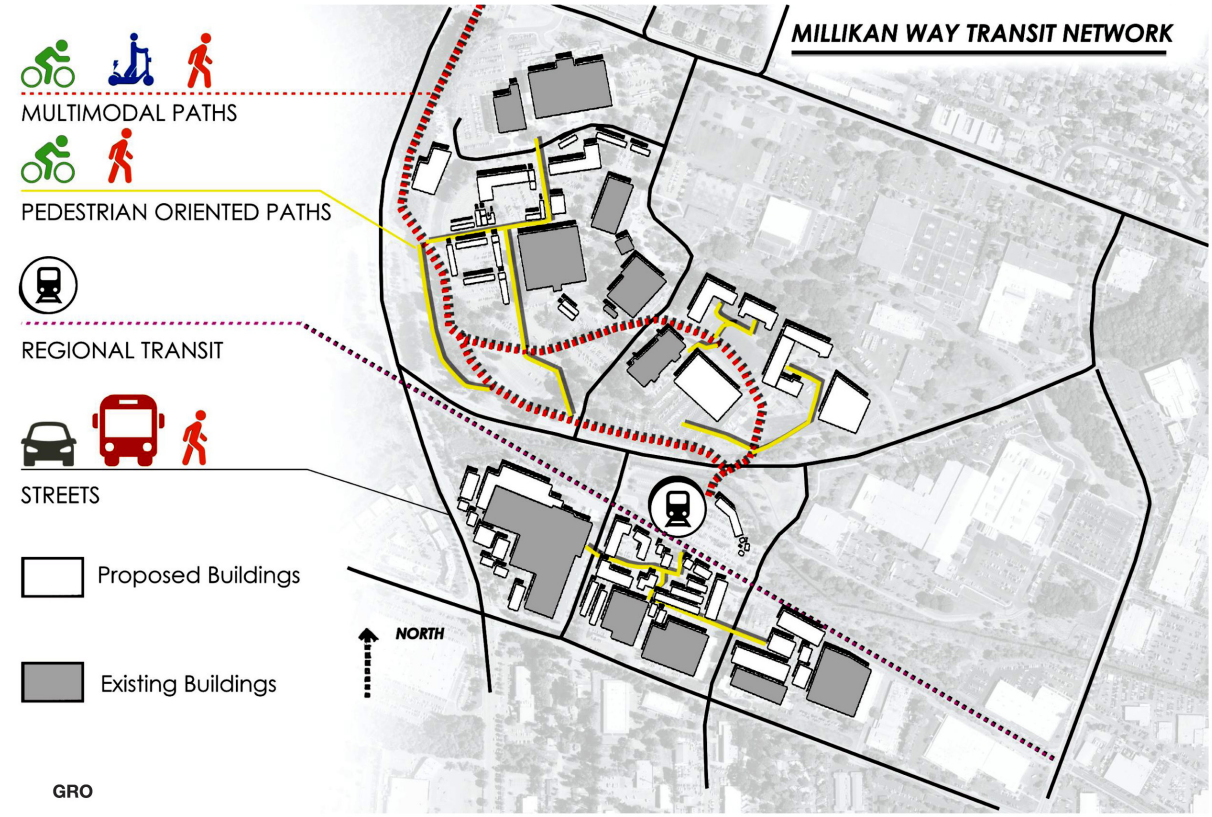


FIG. MK-10

Credit: Connor Iverson

DESIGN DETAILS

The Millikan Way team divided their station area plan into three sectors for more detailed design development as shown in Figure MK-11.

The design concept for Sector A is illustrated in Figure MK-12. The pink 'employment' buildings are existing corporate campus structures and this design contemplates providing places nearby to live and shop for meals and services. Within areas currently in large parking lots, a semi-private quadrangle courtyard is surrounded by 6-10 story high housing structures to include low-income units. Northeast of that is a public 'mixed-use plaza' surrounded by 4-5 story high mixed-use buildings with retail on the first floor and other retail-only buildings fronting the plaza or local-access streets.

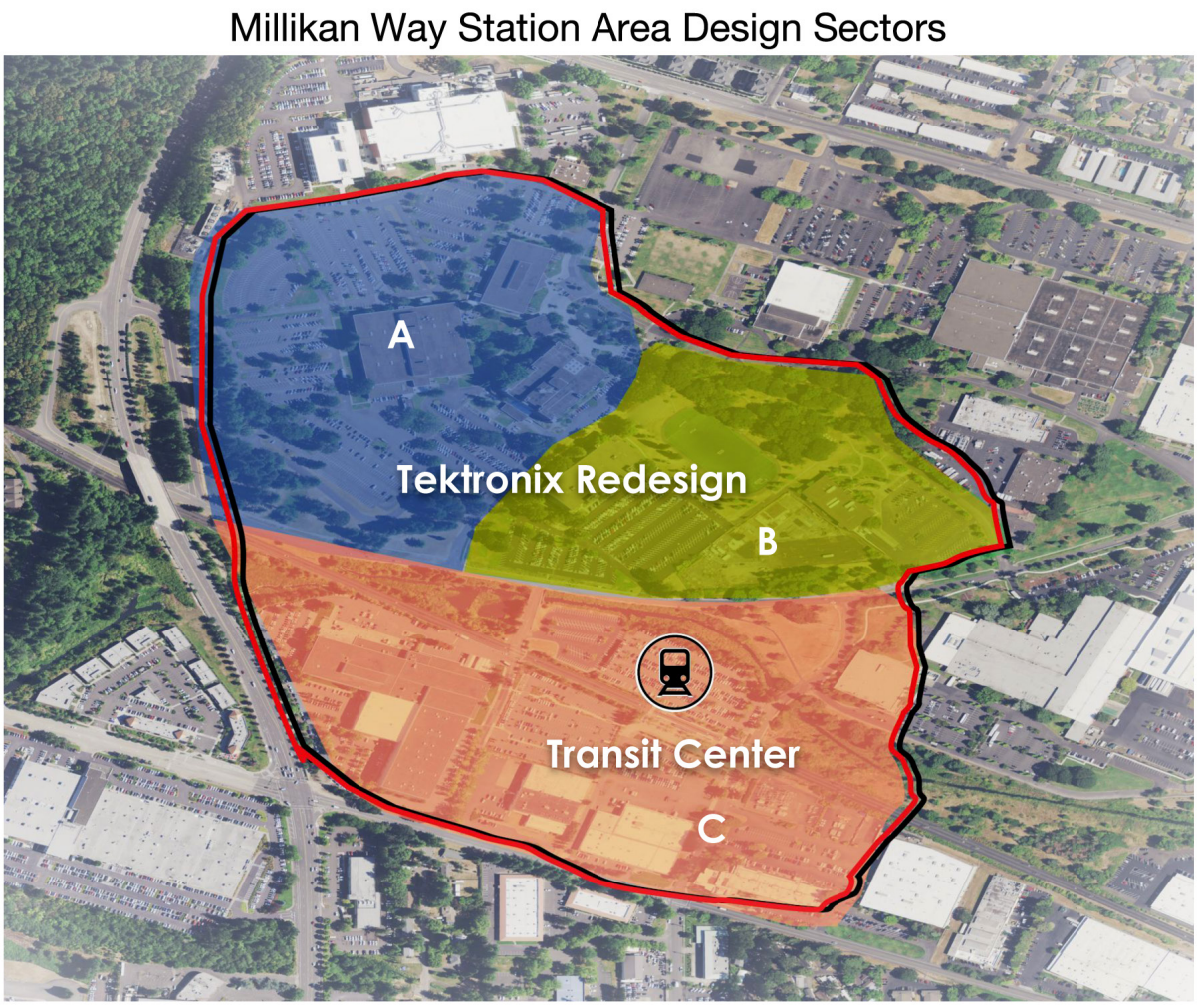


FIG. MK-11

Credit: Connor Iverson

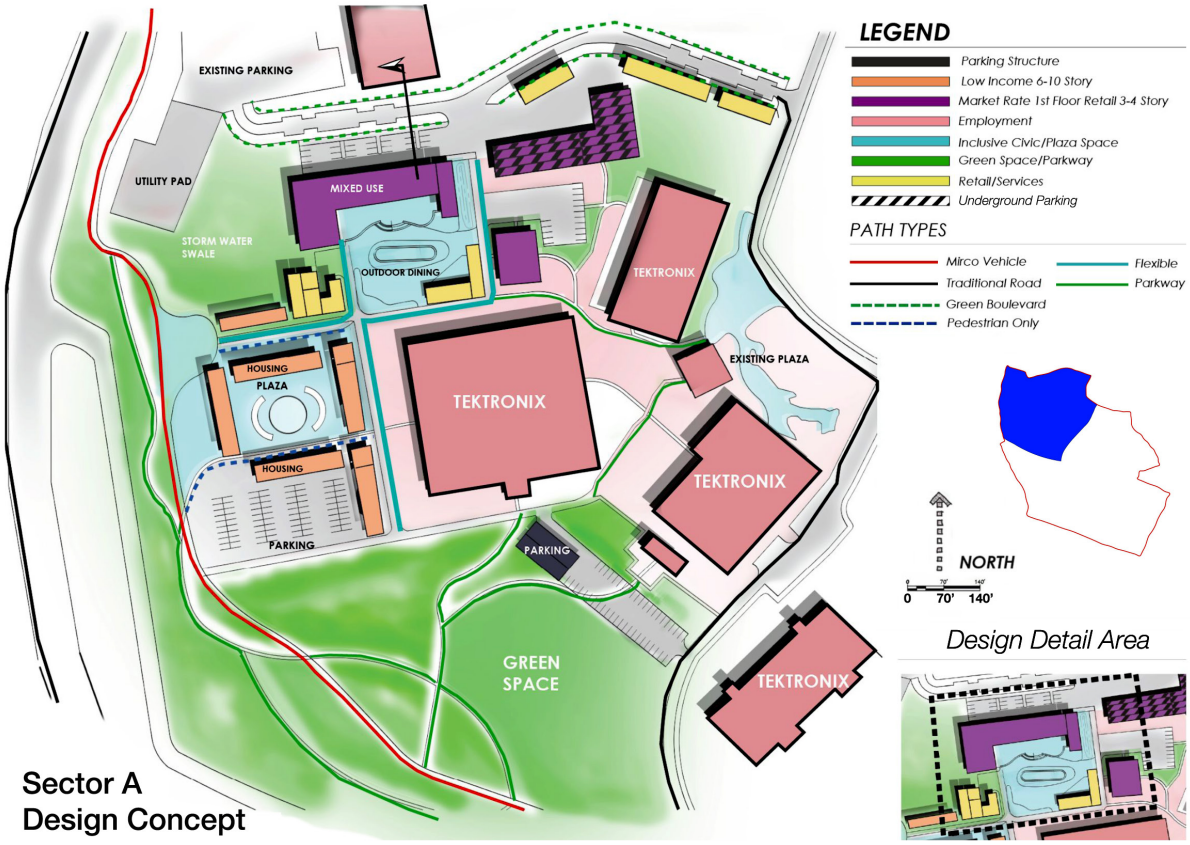


FIG. MK-12

Credit: Grant Olson

Figure MK-13 provides a more detailed illustrative drawing of the mixed use plaza. It is designed to support rich social life during a variety of days and times of day. A more 'private' elevated patio opens up upon entry through the building from the street and guest parking area. It offers tables with a view of the people below but can also be stage for impromptu or programmed performances toward the lower level. The lower plaza is split into a circulating middle 'hallway' and a hanging out or event gathering area near the market and restaurant. The way these spaces serve different users is illustrated by the diagram in Figure MK-14. The spatial relationships among the uses and users of the mixed-use access streetscape north of the plaza are illustrated in Figure MK-15.

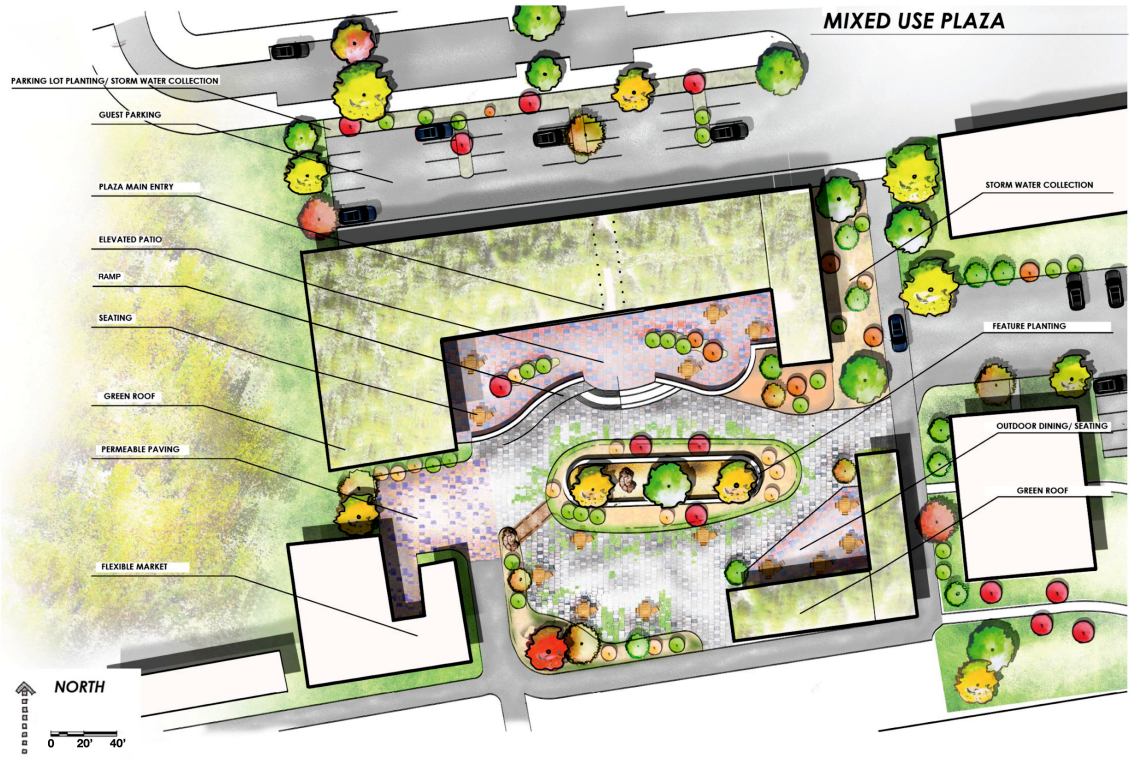


FIG. MK-13

Credit: Grant Olson

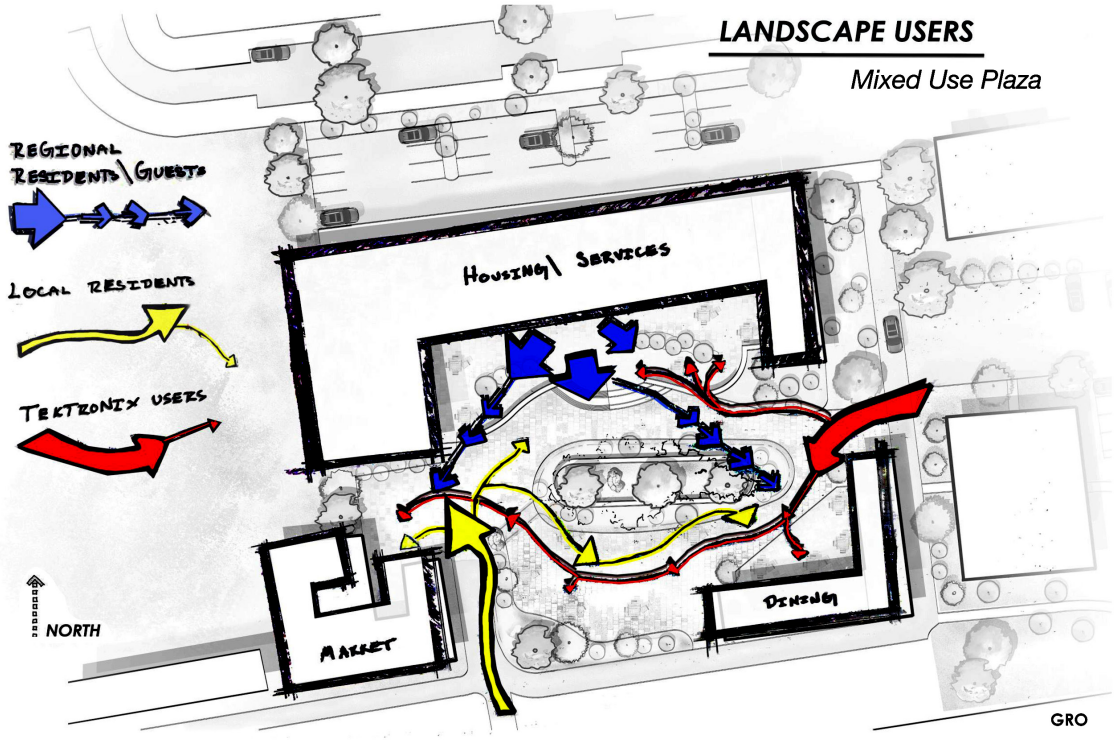


FIG. MK-14

Credit: Grant Olson

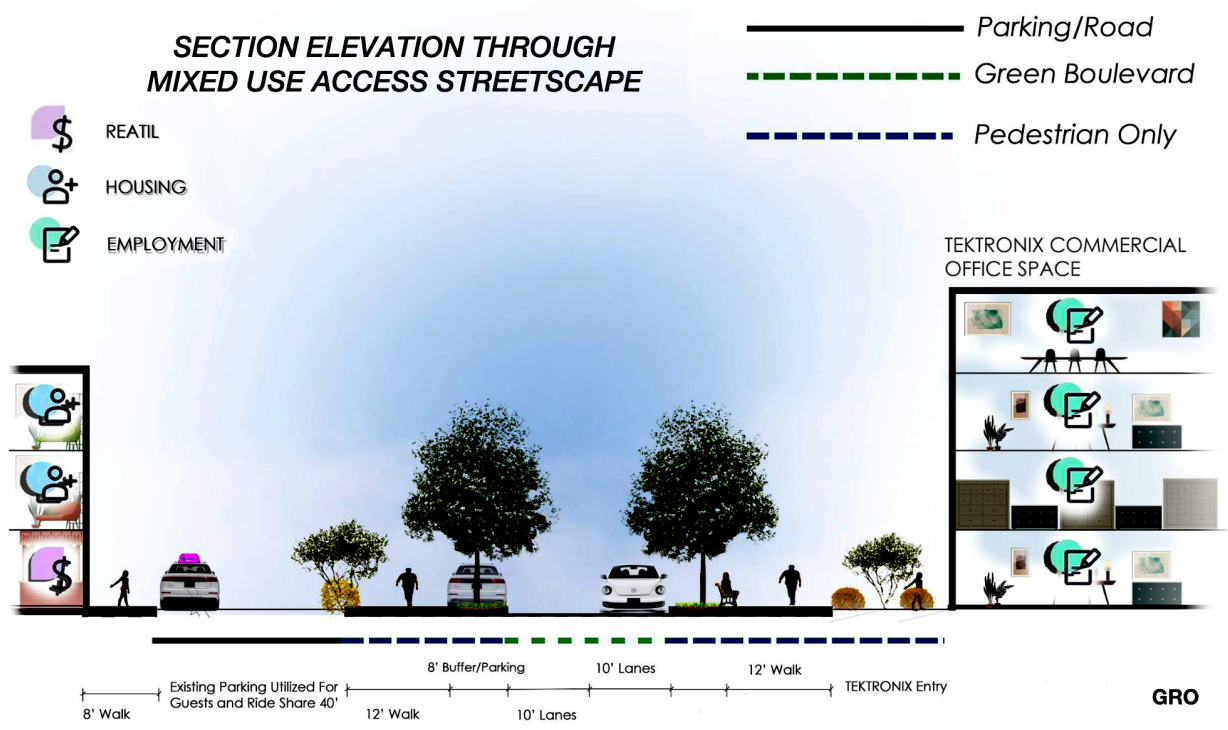


FIG. MK-15

Credit: Grant Olson

The design concept for Sector B of the Millikan Way station area plan is illustrated in Figure MK-16. The pink footprints correspond to existing big box structures. The aim of this rough proposal is to fill much of the existing parking areas with housing and mixed use and replace the lost parking with garages. The new spaces between all the new buildings would consist of plazas, parks and pedestrian-emphasis streets that would typically accommodate micro-vehicles. All these are wide enough to accommodate emergency, utility and service vehicles. The dashed green lines denote paths with intensive and linear green plantings.

North of the station is a long park-and-ride lot with a park to its north of up to Beaverton Creek, as is described below. Immediately southwest of the station are three 6-10 story high apartment buildings surrounding a common green. South of the station is a large public plaza framed by retail units at the base of mixed-use buildings with residents' parking underneath. The same mix of architecture would be found further east at a reduced scale and more intermixed pattern. This area includes a garage for shoppers above the first-floor retail units. A large and tall residential structure is proposed as an addition to the north edge of The Courts In Beaverton structure including a large parking garage. West of The Courts In Beaverton building a set of small missed-use podium structures is proposed to accommodate small retail businesses along a quasi-European pattern of narrow streets.

FIG. MK-16

Credit: Brooke Ridgway

Figure MK-17 illustrates how the proposed Sector B design promises to substantially green-up and make more pervious what is now a landscape overwhelmed by large and sterile buildings and parking lots. It also shows some detailed resolution of a tree planting plan that would contribute to this improvement to the living environment of this place.

A concept diagram of the proposed Millikan Way Station Park is offered in Figure MK-18. Note the scale to appreciate that this would be a rather large park but one still scaled to belong with the station. The south edge of the park follows long, one-way, ride-sharing access ways for TriMet riders to readily gain access to and from the station and also the park. The park includes a podium building along its northeast edge to provide some retail spaces and rental housing without immediately adjacent vehicular access for transit-dependent people. Between this structure and the tracks (with a safety fence) a heavy-use mounded lawn and plaza for framers' markets and food trucks offers an option for TriMet riders and station area residents to eat and enjoy the park (Figure MK-19). The west portion of the park offers dog parks, picnic grounds, playgrounds, shade trees, and an open shelter for station area residents and regional citizens who could take the train to reach these amenities.

FIG. MK-17

Credit: Brooke Ridgway

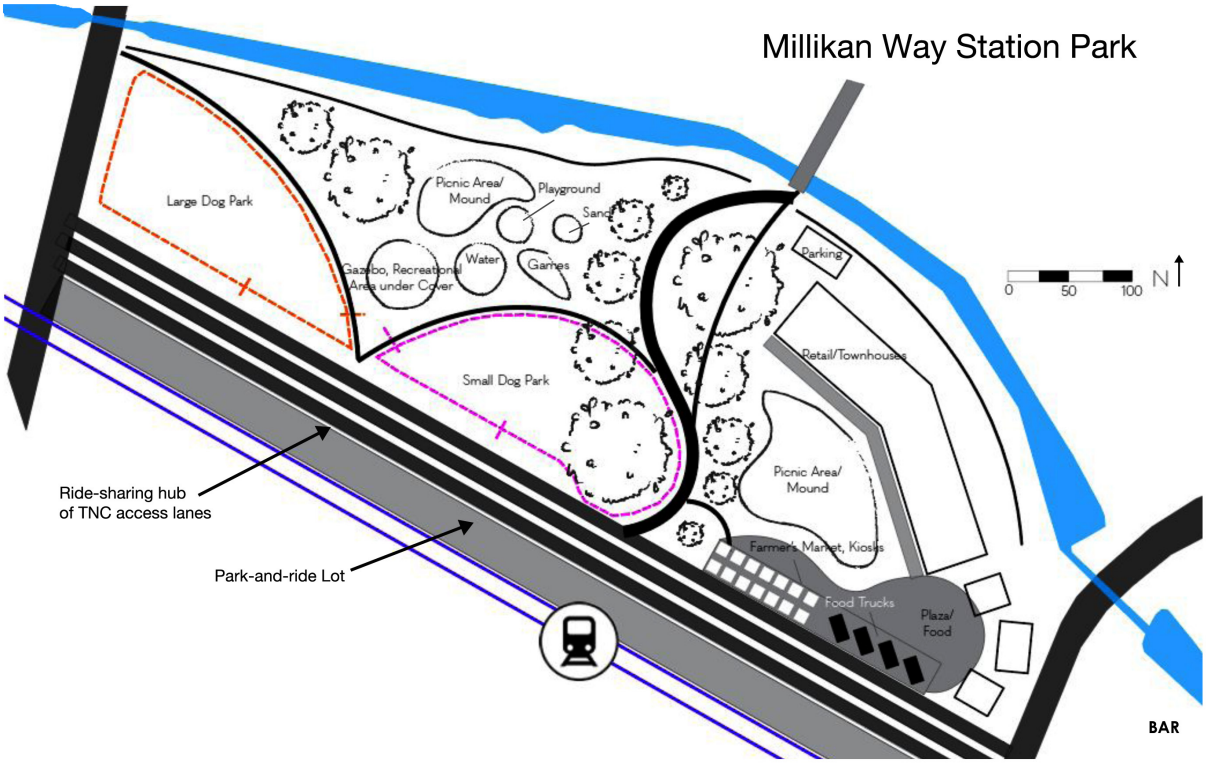


FIG. MK-18

Credit: Brooke Ridgway

FIG. MK-19

Credit: Brooke Ridgway

The design concept for Sector C of the Millikan Way station area plan is sketched in Figure MK-20. The pink footprints correspond to existing big box structures. The gray symbol at the bottom center of this plan would be a large, beautifully designed multi-modal path bridge over Beaverton Creek that links the southern and northern halves of the station area. The student team intends for this to be a striking landmark that denotes the center of gravity of the station area and clearly marks how people can reach the station area developments north of the station beyond the wide creek greenway.

The plan diagram (Figure MK-20) illustrates the students' general and rough concept to repeat more of the surrounding corporate campus landscape in this sector. Large parking lots remain on the periphery with pedestrian only regular access from these to all buildings. Micro-vehicle only and flexible pathways supplement these modes of access, where the latter type includes micro-vehicles. Consistent with this campus concept, there are large treed lawn areas and walking plazas (that are over-scaled in Figure MK-20) between the buildings. The plazas would provide emergency and service access. More corporate campus buildings are contemplated but mixed-use podium buildings are also sketched to add housing and retail

A key conceptual driver of this Sector C concept plan in Figure MK-20 is suggested by the constructed wetland at the center bottom of that plan. Sector C includes the lowest part of the station area north of Beaverton creek where retention ponds now gather storm water from many of the impervious parking lots and buildings on the campus. This is a very basic, traditional, pre-Clean Water Act system that does not effectively filter and treat the pollution from these surfaces.

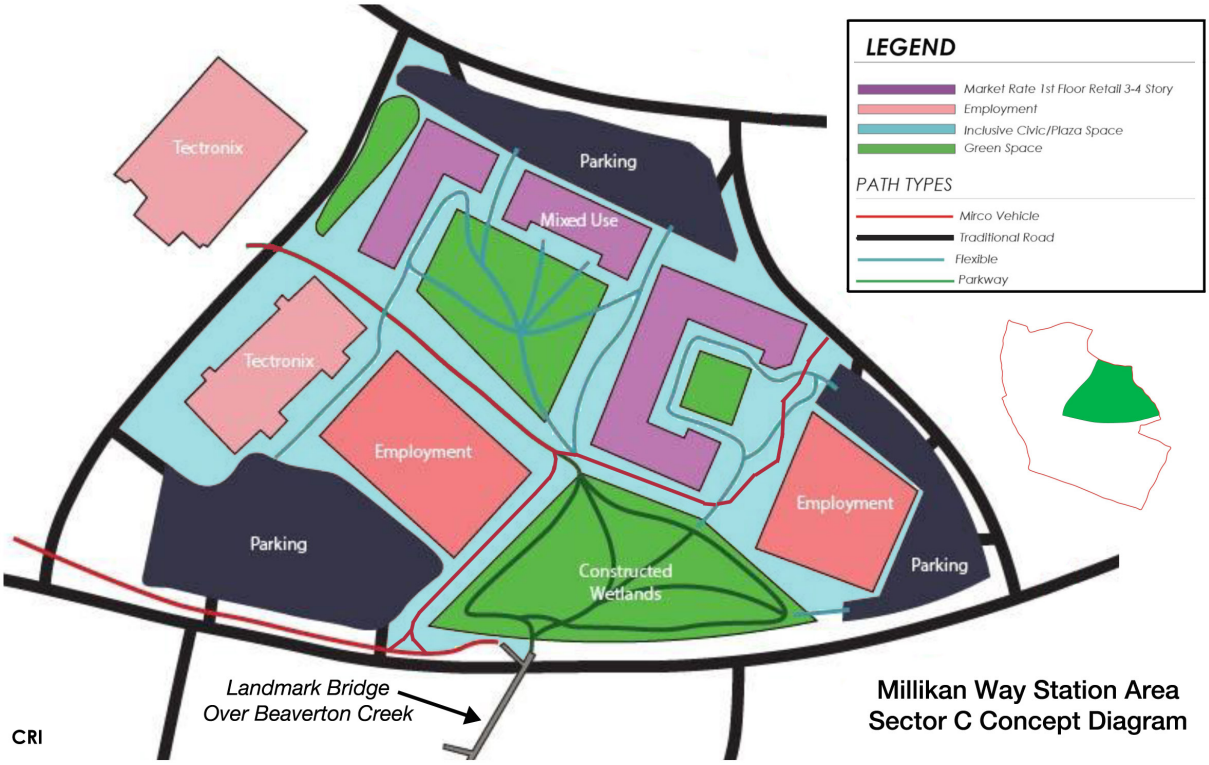


FIG. MK-20

Credit: Connor Iverson

The students propose to upgrade this system to better treat this water before it enters the water table that flows with Beaverton Creek and ultimately the Tualatin River, which has historical water quality problems. The students' conceptual new storm water solution works in concert with the proposed plan in Figure MK-20. It is outlined in Figure MK-21. The basic idea is that the plazas, parking lots and green spaces would be highly pervious. A constructed soil system would be installed under these before they are built, which would store and filter the storm water. The bottom of the constructed soil system might be gravel storage beds with perforated filter-barrier pipes that would carry the water to the constructed wetland. The constructed wetland would be designed as a major landscape amenity for the station area. It would also be engineered to maximally clean the water before it infiltrates to the water table.

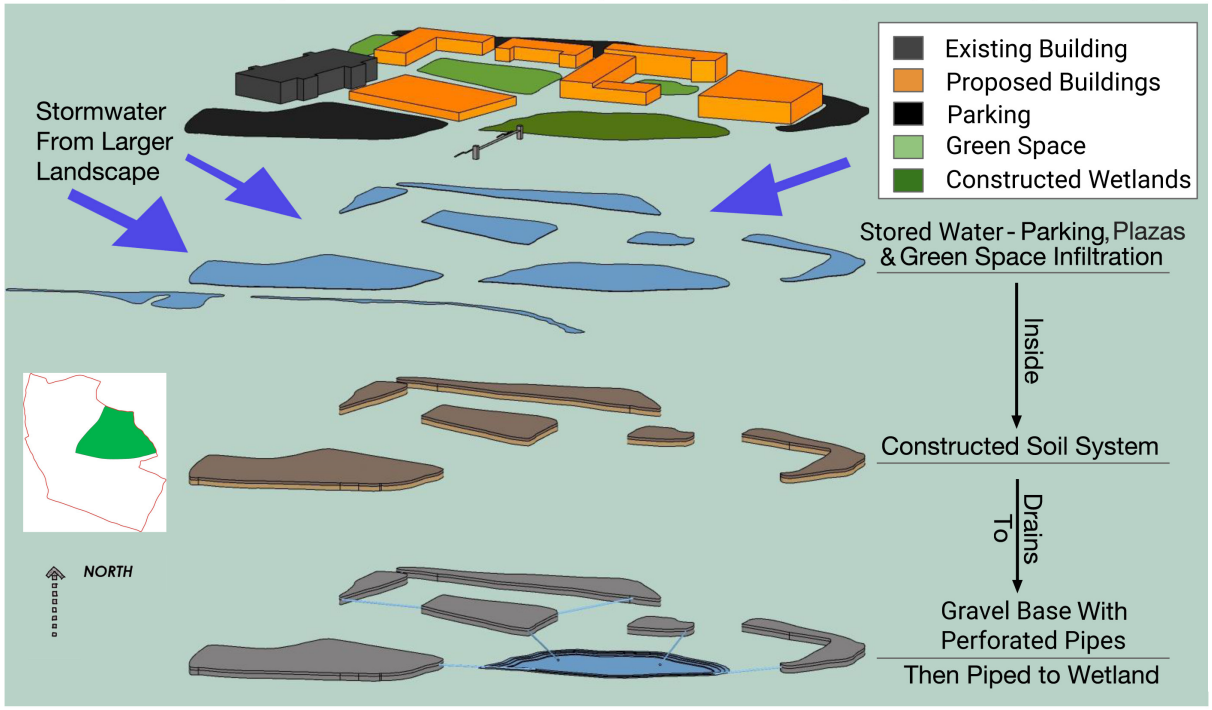


FIG. MK-21

Credit: Connor Iverson

Gateway Station Area

BASIC LAND USE ANALYSIS

The existing pattern of general uses, building heights, streets, parking lots, and the resulting urban structure around TriMet's Gateway station is illustrated in Figure GW-1. This is a land use pattern characteristic of the 1960s and early 1970s. It is a suburban big box shopping center set among residential neighborhoods and strip commercial uses along arterial streets. The neighborhood around the station was split in half by the construction of Interstate Highways 205 and 84 around 1980. TriMet's light rail lines and the Gateway station began to be added soon thereafter.

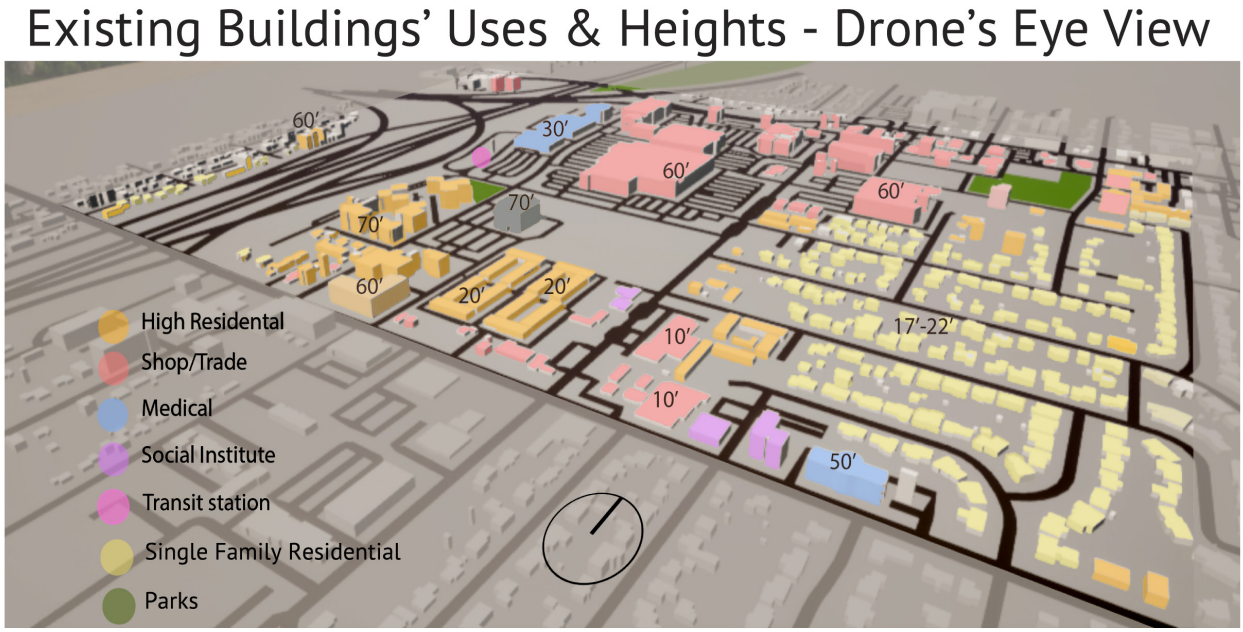


FIG. GW-1

Credit: Mikah Wahlstrom & Austin Mahar

The current Gateway station is a 'forking point' where three TriMet light rail lines split heading east or converge heading west. The station and its well used park-and-ride lot are squeezed into a tight space just east of Interstate 205, south of medical clinics, north of the Gateway Terrace Apartments and west of 90th Avenue. TriMet's tracks approach and leave the station with a bit of a tangle with attendant train congestion and management inefficiencies. TriMet is working to remedy this by relocating the northbound Red Line to directly connect to its existing right of way on a bridge that crosses over both freeways and the Gateway Green park.

The area around Gateway station is arguably a textbook example of where a high density, mixed-use development might belong. Frequent trains, proximity to the freeways, moderately high population within two miles, freeway congestion in all directions during rush hours, and mostly older land uses in and near the station all favor such redevelopment. It could become Portland's second downtown.

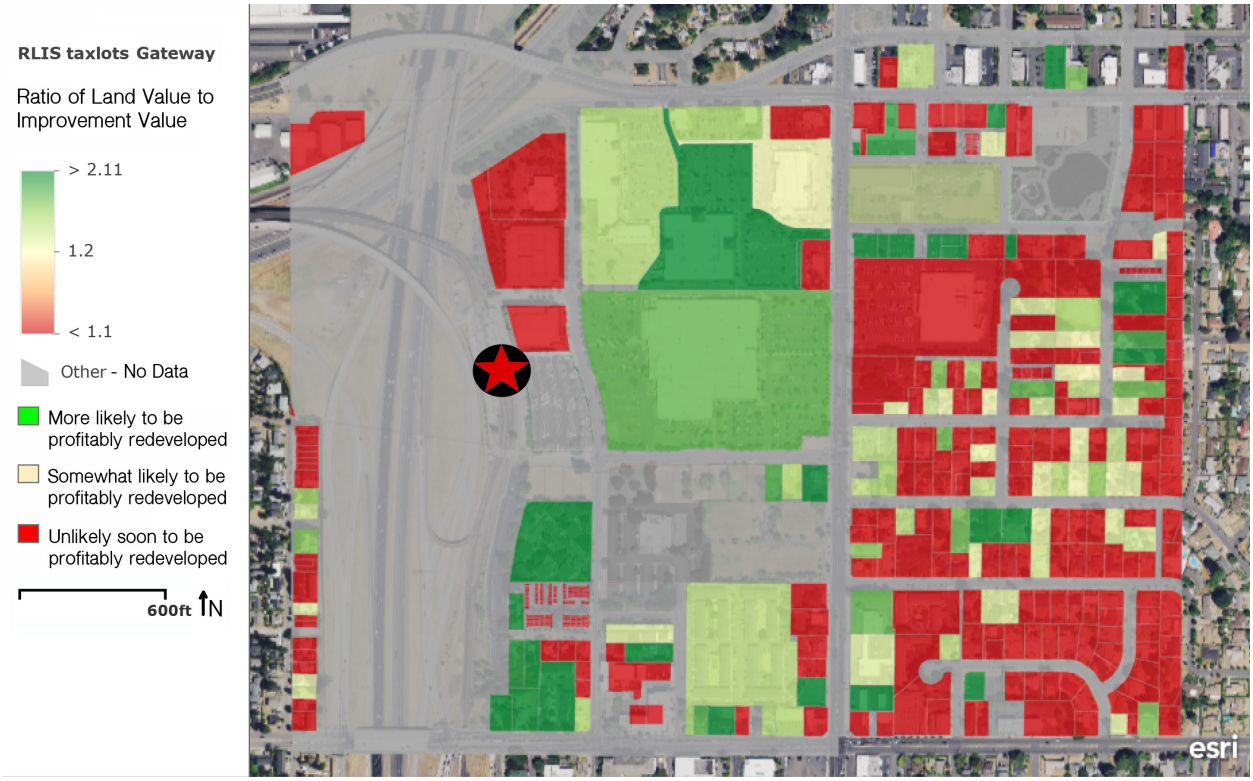


FIG. GW-2

Credit: Yeongseo Yu

East of Gateway Station is an extensive set of large parcels with big box stores, primarily a very large one (owned by PacTrust) with the Fred Meyer and Kohl's stores. These are profitable but likely underperforming their potential at this location (Figure GW-2), particularly in light of the above discussion. Southeast of the station is another very large parcel harboring an abandoned school. The school's owner could sell this for redevelopment for a strong price, or sell part of it and build a new school on the rest. The student team's interpretation of parcels' potential for redevelopment is mapped in Figure GW-3. Within the blue parcels there, the team chose to focus mainly upon the collection of large big box parcels and the closed school parcel. They also attended to parcels east of 102nd Avenue with redevelopment potential which could be employed to link the station area to Portland's new, award-winning Gateway Park two blocks east of the big box parcels.

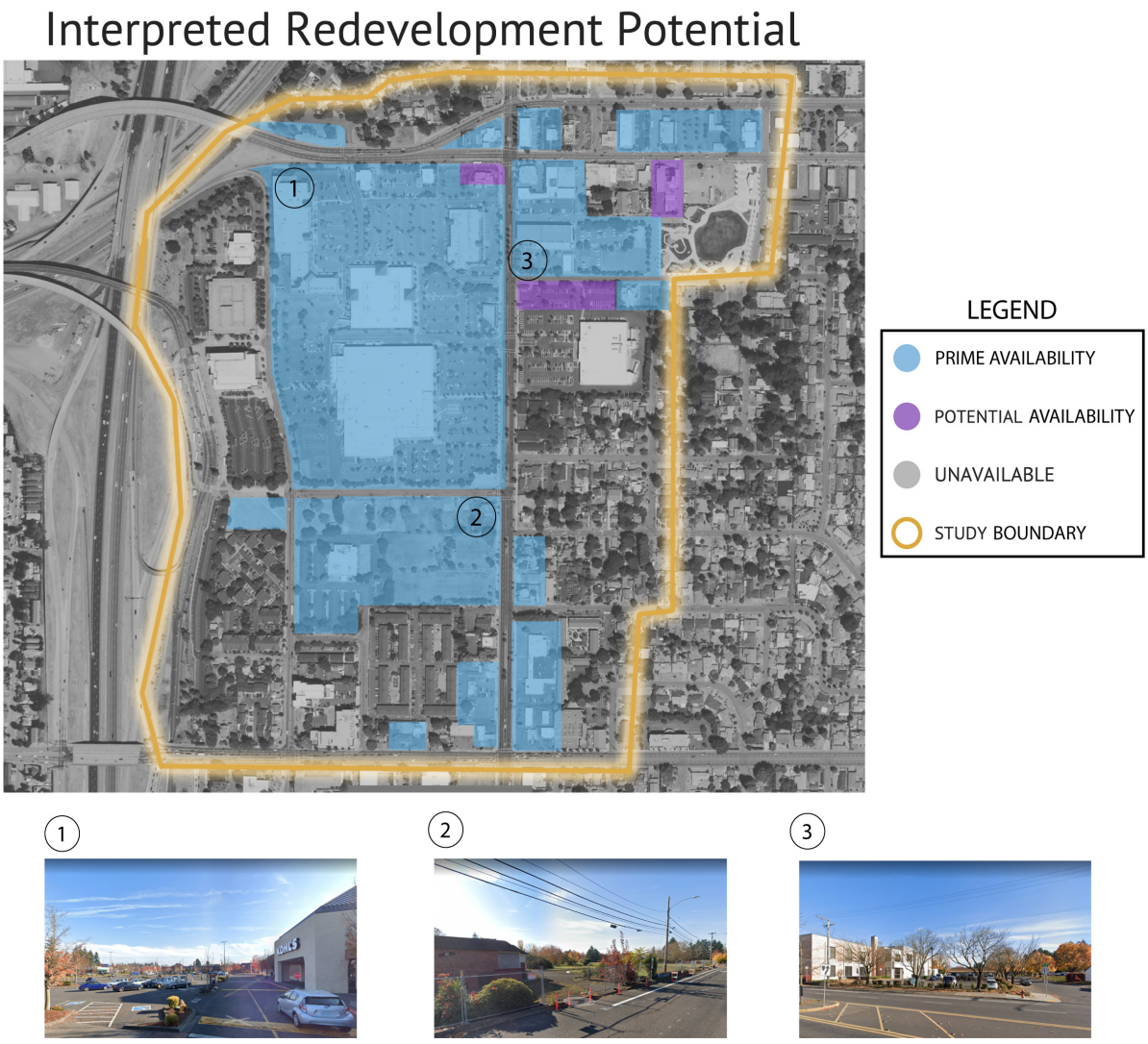


FIG. GW-3

Credit: Mikah Wahlstrom

The initial general concept diagram for this Gateway station area is in Figure GW-4. The big move it contemplates is to move the light rail station to the center of the station area, where the Fred Meyer store is now. It would be surrounded by a public plaza with large parks north and south of that plaza. 6-10 story tall housing structures would surround these central open spaces and some would also sit within them. Most of these buildings would have retail and service spaces on the first, or first and second, floors facing the central park and plaza spaces.

The Fred Meyer store would be relocated to a two-story 'downtown-style' department store structure at the corner of 102nd Avenue and Pacific Street. Another large retail footprint is proposed at the corner of 99th Avenue and Pacific Street. Parking garages would be found all around the perimeter of the station area to serve residents, shoppers and visitors, with these concentrated more near the

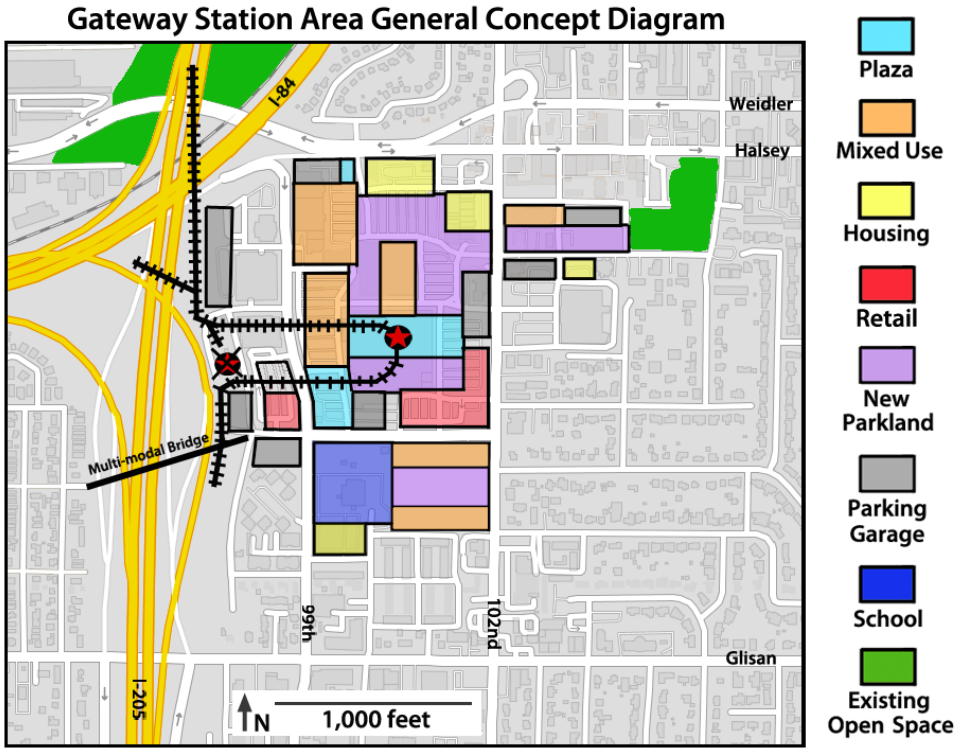


FIG. GW-4

Credit: Robert Ribe, Mikah Wahlstrom & Austin Mahar

station and the two large retail stores. The existing medical buildings with their parking garage would remain.

A new park would reach eastward to make a continuous set of park blocks between Gateway Park and the big park on the north side of the station area. This park would also be surrounded by housing, mixed-use podium buildings and parking garages. The school district property could include a new school along with podium-style housing and mixed-use structures and another park for the residents there.

TEAM GOALS

- An aggressively creative, forward-looking plan was pursued.
- The light rail station should be moved to the center of the PacTrust parcels, but the station area plan should still function if this is not possible.
- The greater mass of the station area is to be a car free zone organized by extensive and integrated open spaces rather than buildings.
- Design attention focused mainly on fostering a diverse, fascinating and socially engaging life of activities and landscape aesthetics for various people within the park and plaza spaces.
- Access throughout the car free zone is to be nearly as easy as if normal car access were provided by means of numerous and frequently available autonomously circulating micro-bus shuttles, micro-vehicles (whether shared or owned) and walking.
- TriMet buses and TNC cars will access part way into the car free zone, but the above listed means will be required to reach the central light rail station.
- The station area should be rich in shopping and dining opportunities for the region as well as station area residents and neighbors.
- A greenway should connect between the station, wherever it is, and Gateway park.

- High housing density will be achieved with fewer buildings but with more floors and bigger footprints than developers might normally favor.
- Design details throughout the station area should optimize safety, accessibility, and community hubs, as advocated by Gehl Studios and illustrated in Figure GW-5.
- Walkability from surrounding neighborhoods, including that across Interstate 205, should be improved from the current conditions mapped in Figure GW-6.

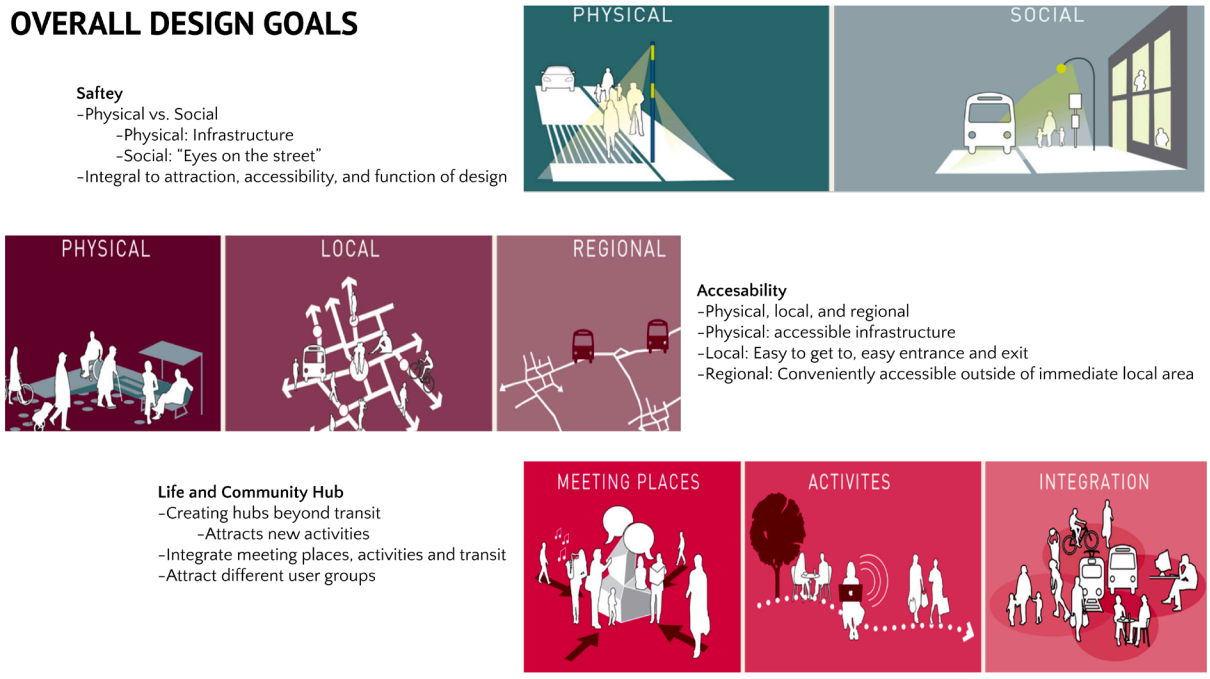


FIG. GW-5

Credit: Mikah Wahlstrom & Austin Mahar

Neighborhood Walkability

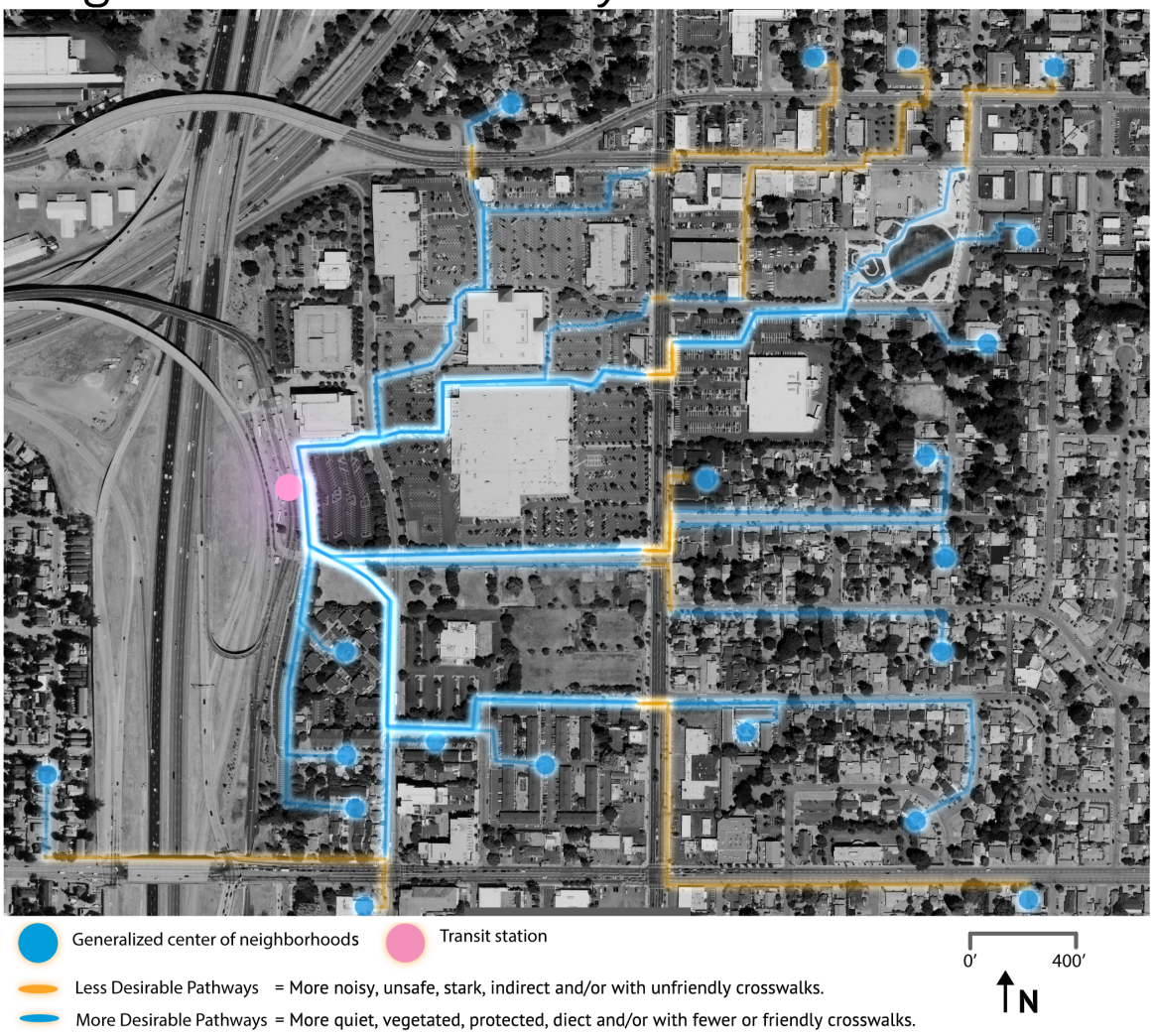


FIG. GW-6

Credit: Mikah Wahlstrom

STATION AREA PLAN

The students' proposed station area plan for Gateway station is mainly presented in Figure GW- 7. The whole of their urban design concept is understood by also considering the thematic maps in the three subsequent figures. The suggested new station location is at the star symbol in Figure GW-7, although it could be located anywhere along the colored ladle-shaped loop through the center west of the station area. The gray footprints are proposed new buildings with uses sketched in Figure GW-8. At the center of the station area, just northwest of the station, is a bridge retail building suspended above the ground between two other buildings with a diagonal horizontal window or hole all the way through it. This is meant mainly to be a cover over part of the central plaza space against rain and sun, and the students, who are not architects, decided to make it double as a shopping center. The green areas in Figure GW-7 are vegetated landscaped spaces; and that plan drawing and

FIG. GW-7

Credit: Mikah Wahlstrom & Austin Mahar

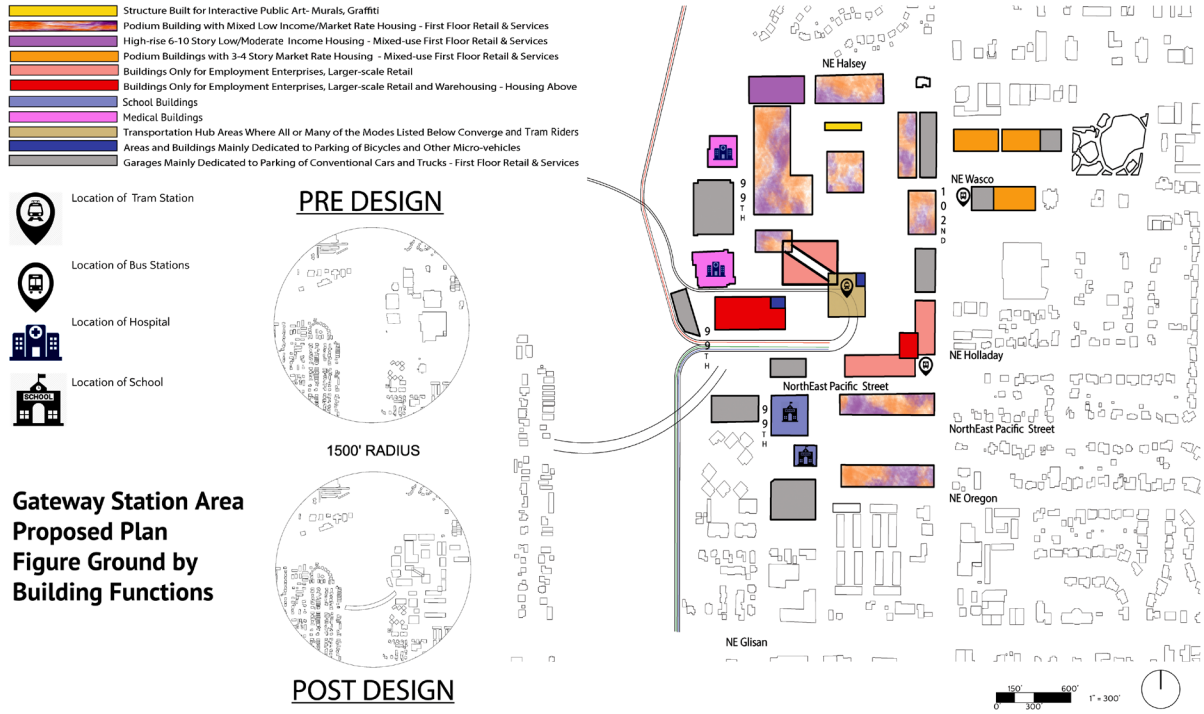


FIG. GW-8

Credit: Mikah Wahlstrom & Austin Mahar

legend emphasizes the types of social life and activities there that were a major agenda that drove the student team's station area plan and details.

The functions of the buildings within the Gateway station area plan are mapped in Figure GW-8. There is substantial floor space dedicated to retail and employment near the station, as would be consistent with creating a second Portland downtown. Most of the housing is proposed in the upper floors of mixed-use podium buildings with low income housing mixed in. One high rise dedicated to lower income residents is proposed at the north edge next to Halsey Street. Market rate mixed-use podium structures are proposed to frame the greenway corridor that connects to Gateway Park. Nine low-rise parking garages are proposed dispersed throughout the plan to provide proximate parking to shopping, public spaces and housing throughout the otherwise car-free station area.

The essential skeleton of the station area plan are the large and integral public spaces mapped in Figure GW-9. These are the car-free common park and plaza spaces that would make this urban landscape truly humane. Throughout are places for living, shopping, accessing services, enjoying art and commuting through, as described in the annotations on the left side of Figure GW-9. The micro-vehicle and shuttle pathways and pedestrian paths that would tie all of this public realm together are mapped and described in Figure GW-10.

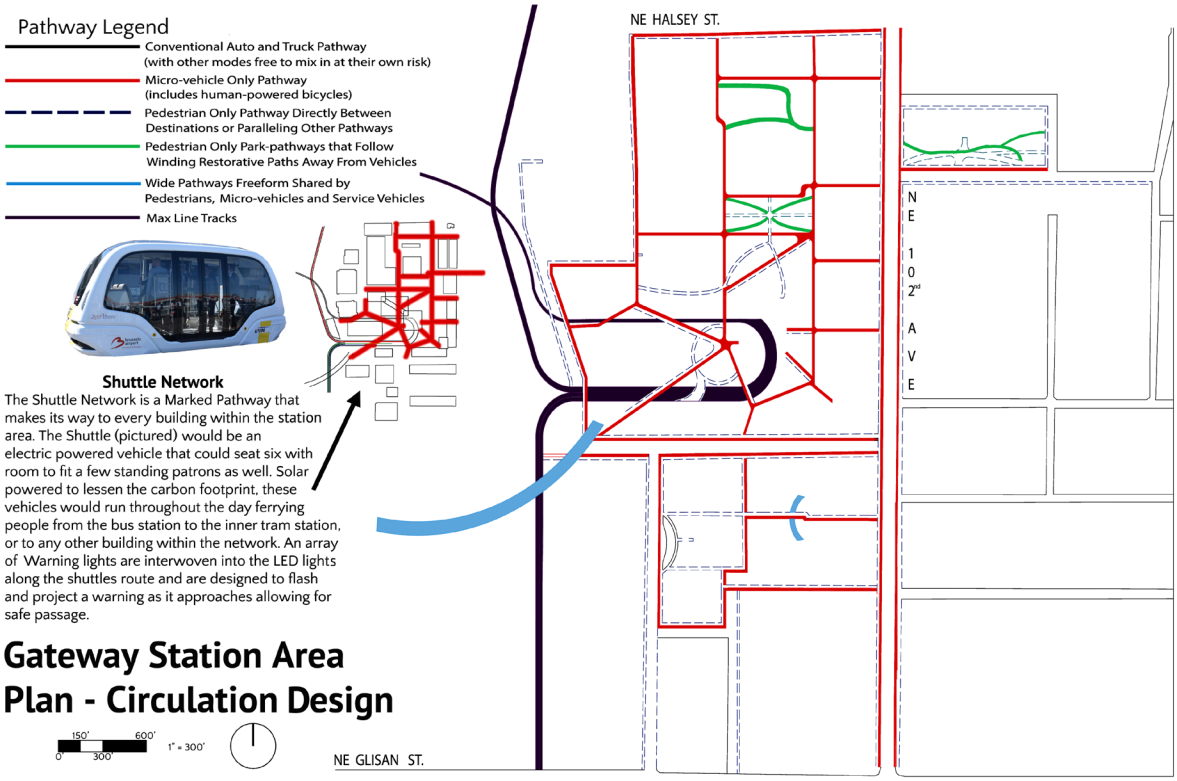


FIG. GW-9

Credit: Mikah Wahlstrom & Austin Mahar

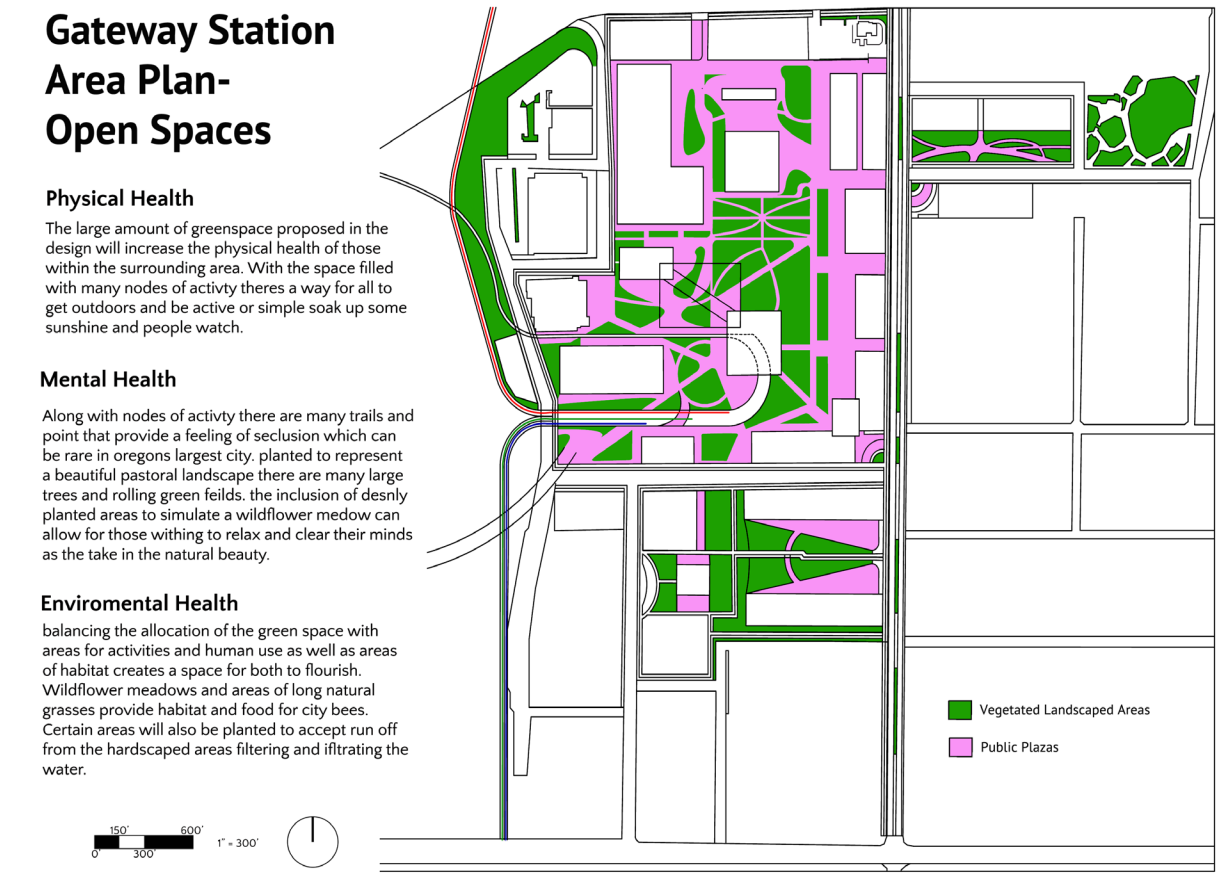


FIG. GW-10

Credit: Mikah Wahlstrom & Austin Mahar

DESIGN DETAILS

The proposed central plazas near the light rail station would be visited by the most people. The expected life of these plazas is depicted in Figure GW-11. Large plaza spaces would accommodate flexible seating and extemporaneous concerts near beds full off prairie-style flowers appointed with interactive sculptures. The shuttle and micro-vehicle paths would come right to the station doors and the whole scene would be observed by residents on balconies above. The same pattern would be found in the covered part of these plazas (Figure GW-12) with formalized restaurant seating and tall trees and sculptures poking up into the hole in the overhead building. At the left edge of this prospective view a shuttle is emptying wheelchair bound people who can easily cross the level plaza to the station or other entries.

The pedestrian paths through the central plaza must cross the light rail tracks, posing a safety problem. The student team offers a creative solution depicted in Figure GW-13. Large exclamation points near these crossings, and also bollards near the tracks, would flash brightly as trains approach, and a warning might also sound. The view in Figure GW-13 does not show fencing along the tracks between the path crossings, emulating how TriMet trains move within downtown Portland, but these could built.

Gateway Station Area - Central Plaza At TriMet Station

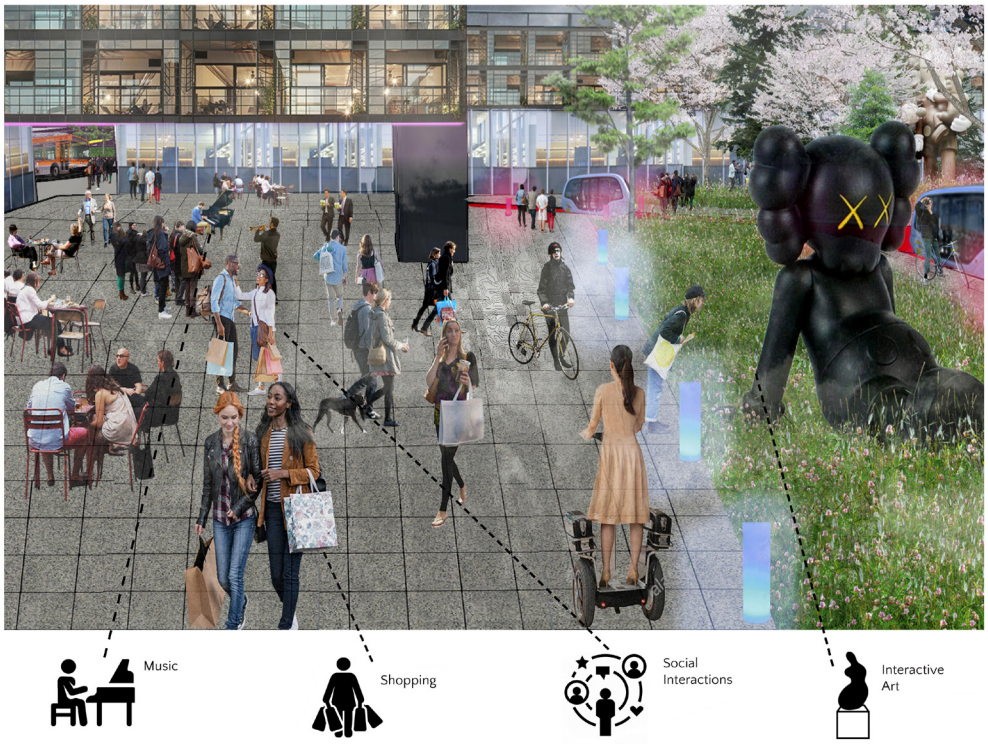
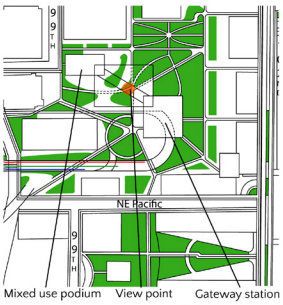


FIG. GW-11

Credit: Mikah Wahlstrom

Gateway Station Area - Open Shopping Plaza Near TriMet Station Underneath a Residential Building



Covered Shopping Area

Just to the northeast of the gateway transit station the building is suspended between 30' - 40' feet in the air and separated to allow for the natural light to filter in and provide a space for plantings. creating an indoor outdoor space filled with life. A podium building attached kitty corner from the transit station allows for both shopping and restaurant opportunities.

FIG. GW-12

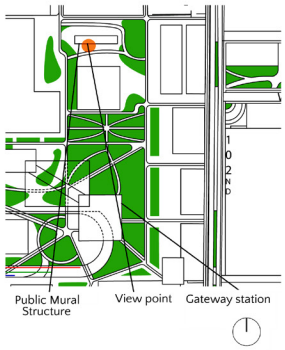
Credit: Austin Mahar

FIG. GW-13

Credit: Austin Mahar

The life sought by the student team within the many other car free public spaces throughout the station area is illustrated in Figure GW-14. Residents and visitors would interact with and act upon spaces, places and works of art everywhere. The long mural wall all around the purpose built structure at the north edge of the public realm would be a magnetic center of gravity for this shared creativity. The murals could change over time, sometimes curated and sometimes improvised in unexpected ways. Another way that socially self-organized and always novel creativity could be found throughout the station area is described in Figure GW-15. Residents and visitors would download a phone app by which bollard and other lights would shift to a favorite color as they approached, only to be replaced by someone else's color as they instead more nearly approached a light. This app could evolve in new ways over time.

Gateway Station Area - Mural Wall Along North Edge of Art Space Plaza



Public Mural Space

The public mural space is an open air concrete structure dedicated to art and expression. People who live in the surrounding neighborhoods or greater area can travel to and freely paint on any surface of the structure. Others are free to watch and admire the work of others. This will create a dynamic of social interaction and expression between all age groups, and an ever changing piece of collective art.

FIG. GW-14

Credit: Austin Mahar

Gateway Station Area - Public Extemporaneous Control of Lights Throughout the Public Realm

Within the site there is a network of interactive led lights. These lights can be interacted with via an app on your phone. This app can be a stand alone app or in conjunction with an all in one transit app. The app would contain a simple color wheel where you could select a favorite color. As you traverse the sight you will begin to notice the lights changing to the chosen color as you approach them creating a unique experience. The experience again evolves as more than one person approaches a singular light with different chosen colors.The colors begin to blend and dance on the LED screen creating an ever changing experience. Specialized lights along the micro vehicle and shuttle pathways will be equipped with a speaker that will project a warning and flash red letting those in the surrounding area know the shuttle is approaching.

FIG. GW-15

Credit: Mikah Wahlstrom & Austin Mahar

The experiential character of the north forested micro-park in the north plaza is illustrated in Figure GW-16. If residents and visitors wish to walk or ride from there to Gateway Park east of the station area, they would do so through a similar parkway space depicted in Figure GW-17.

Walkable and safer access to and around the station area on pedestrian and micro-vehicle paths would be important. An example developed by the student team would be to add micro-vehicle lanes to both sides of 102nd Avenue (Figure GW-18). That along the west edge would include both a new bike boulevard and a wide, dedicated pedestrian sidewalk, both added into additional, widened public right of way. More important is the proposed long pedestrian and micro-vehicle bridge suggested in Figure GW-19. It would cross above Interstate 205 to provide direct, safe and attractive access to the station area for residents of the neighborhood west of the freeway. This would help reconnect the two districts as they once were.

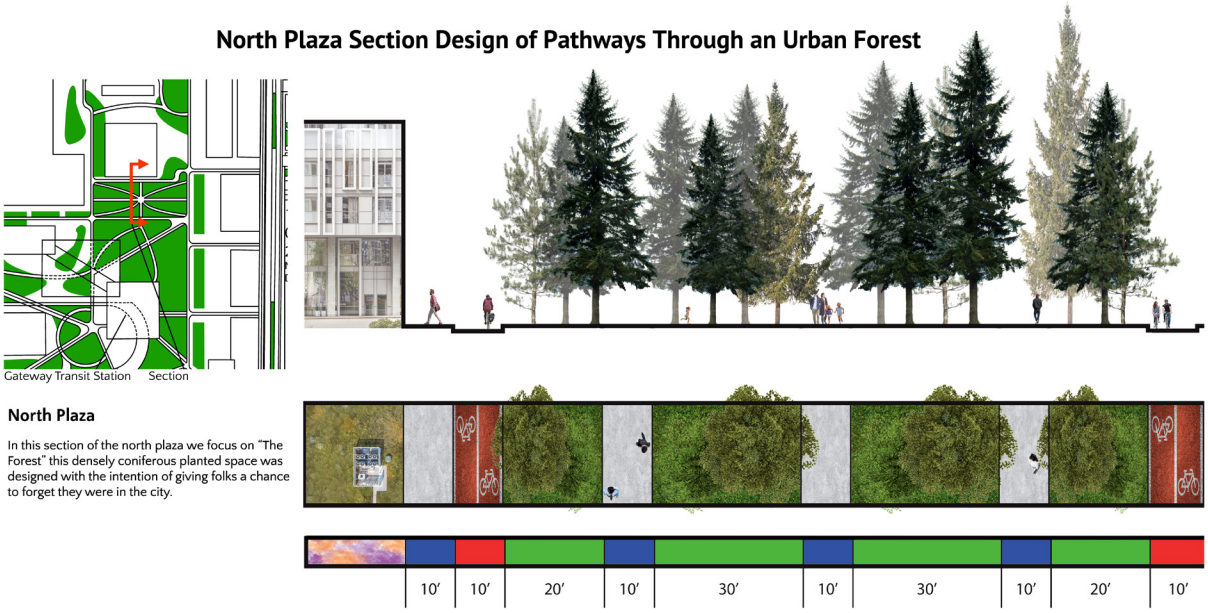
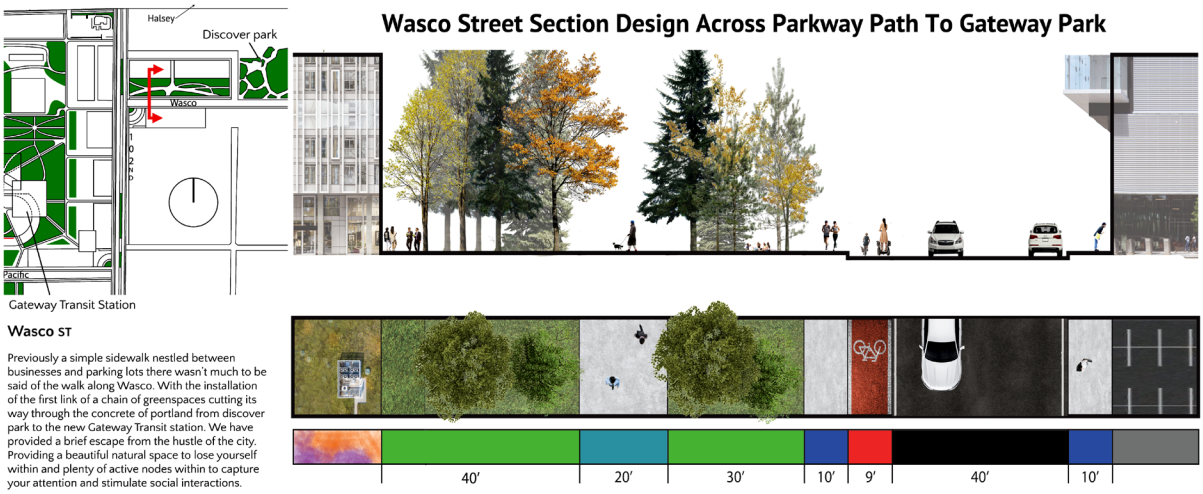


FIG. GW-16

Credit: Mikah Wahlstrom

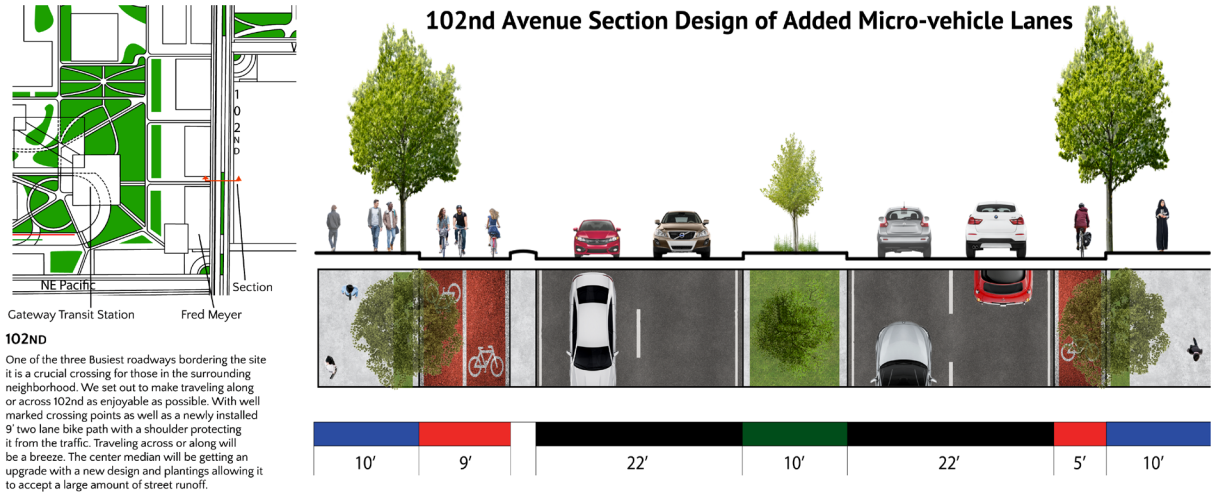


Wasco ST

Previously a simple sidewalk nestled between businesses and parking lots there wasn't much to be said of the walk along Wasco. With the installation of the first link of a chain of greenspaces cutting its way through the concrete of portland from discover park to the new Gateway Transit station. We have provided a brief escape from the hustle of the city. Providing a beautiful natural space to lose yourself within and plenty of active nodes within to capture your attention and stimulate social interactions.

FIG. GW-17

Credit: Mikah Wahlstrom



102ND

One of the three Busiest roadways bordering the site it is a crucial crossing for those in the surrounding neighborhood. We set out to make traveling along or across 102nd as enjoyable as possible. With well marked crossing points as well as a newly installed 9' two lane bike path with a shoulder protecting it from the traffic. Traveling across or along will be a breeze. The center median will be getting an upgrade with a new design and plantings allowing it to accept a large amount of street runoff.

FIG. GW-18

Credit: Mikah Wahlstrom

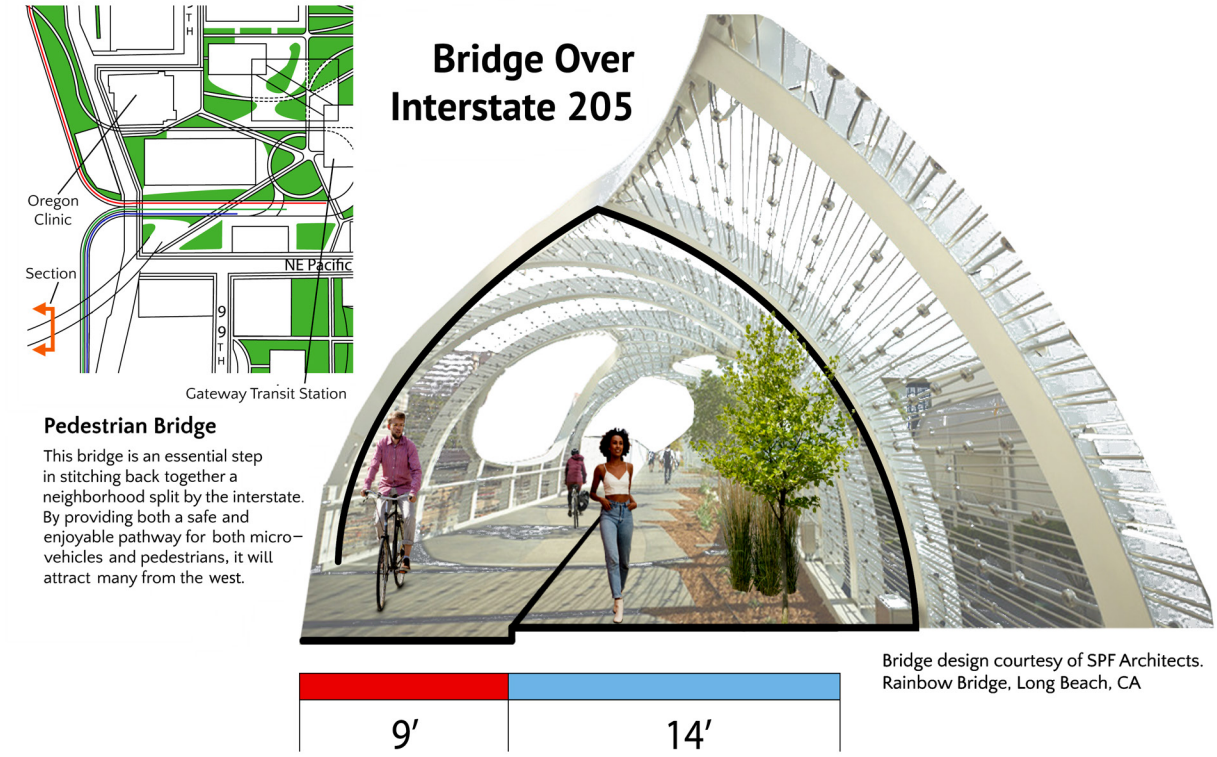


FIG. GW-19

Credit: Mikah Wahlstrom

Parkrose Station Area

BASIC LAND USE ANALYSIS

The Parkrose Station sits in the middle of Interstate 205 where it curves down slope toward the PDX airport. A pedestrian ramp and bridge connects the station platform up and over the northbound lanes only to reach the neighborhoods east of the freeway. The bus station and small parking lot with the station lie between the top of the highway cut slope and Sandy Boulevard. The neighborhoods around the station are bifurcated by major arterial streets: Sandy Boulevard and Killingsworth Street. South of Killingsworth are suburban developments of the 1950s and 1960s, consisting mainly of residential uses and small commercial fronts along Sandy Boulevard. North of Killingsworth Street are all scales of industrial uses with a few parcels now used as low-income housing in the form of permanent recreational vehicle camps (Figure PR-1). Housing types are mainly single family or duplex with a minority of parcels in apartment complexes (Figure PR-2). Due to their light touch approach to the Parkrose Station area, the student team sought to largely conform to the existing zoning districts (Figure PR-3), as opposed to the other teams in the class that assumed substantial zoning changes would be needed to implement station area redevelopments.

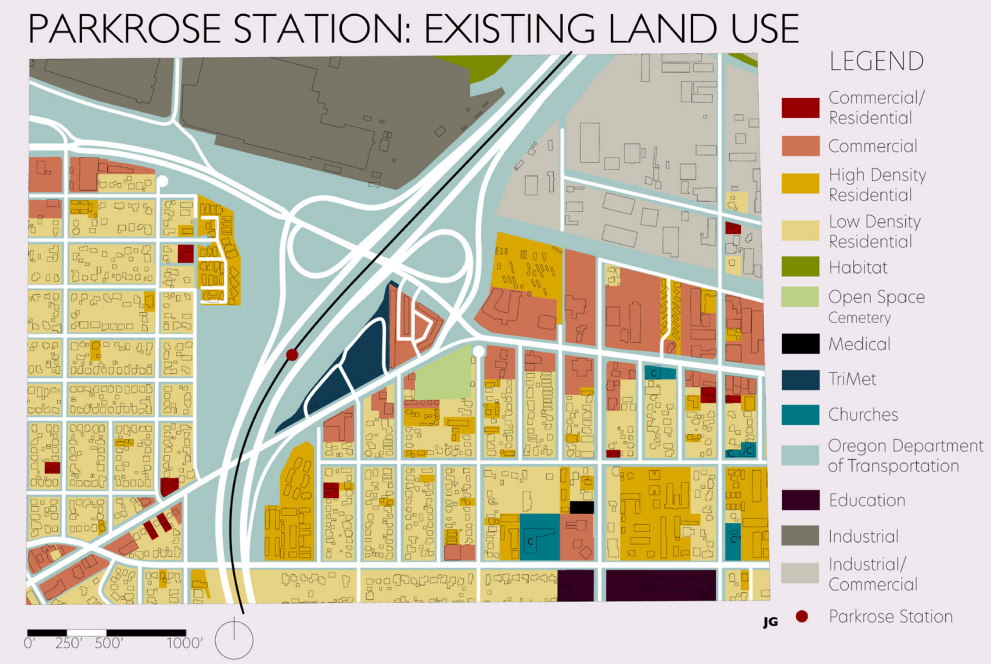


FIG. PR-1

Credit: Jessica Gonzalez

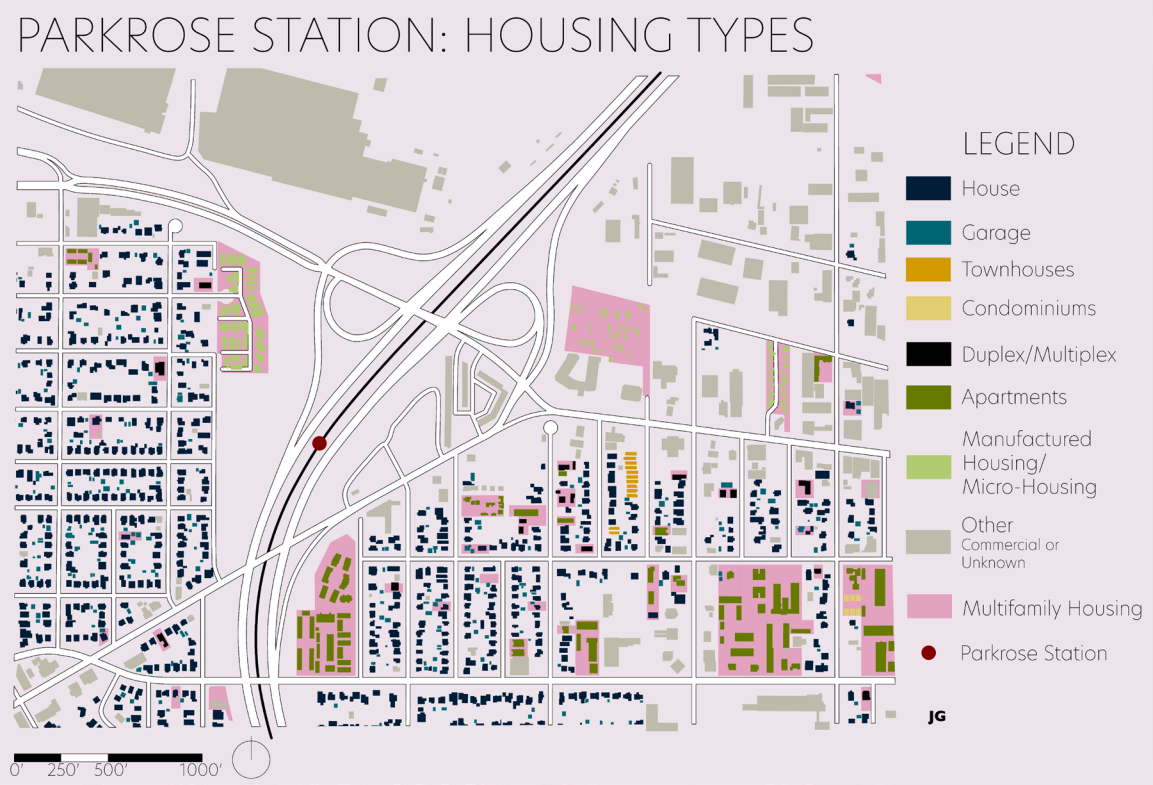


FIG. PR-2

Credit: Jessica Gonzalez

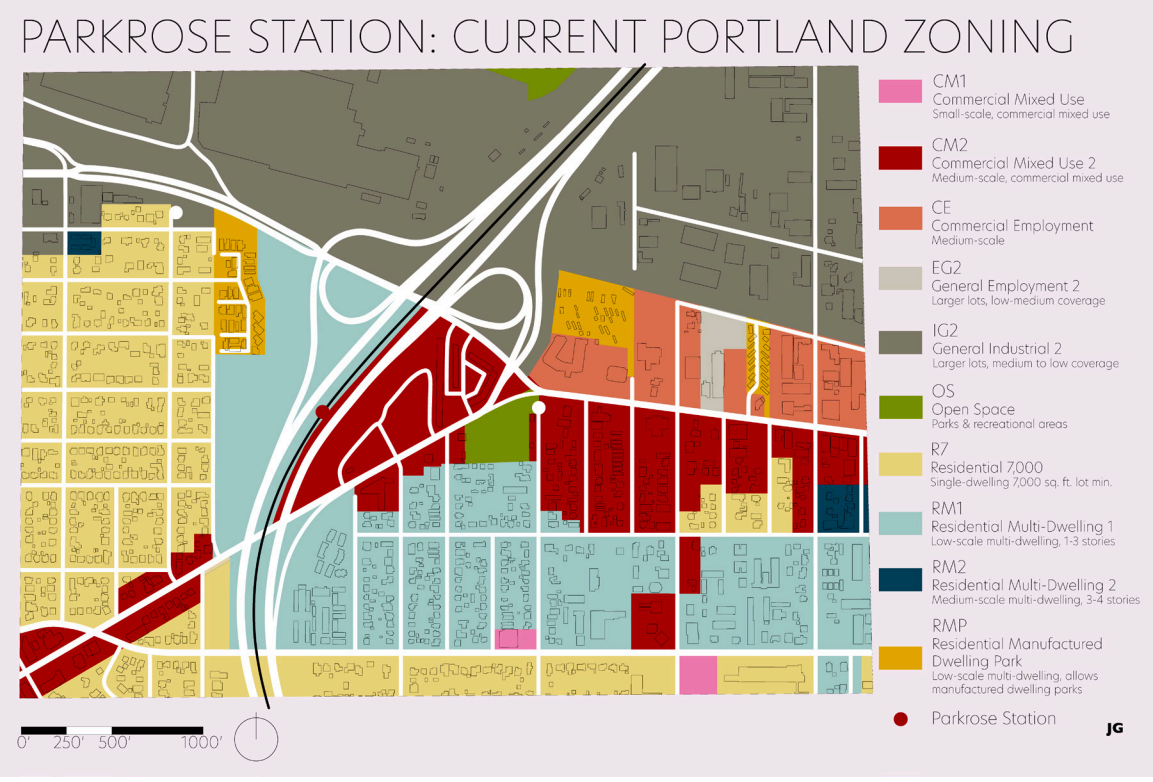


FIG. PR-3

Credit: Jessica Gonzalez

The Parkrose Station area is mostly economically viable and is providing substantial low and moderate income housing in the many small but reasonably well maintained homes and apartments, as well as in a few newer apartment complexes. The city of Portland has mapped this area as potentially vulnerable to gentrification. This might be more true near the Parkrose Station but the noise from the freeway mitigates against such redevelopment. The students favored maintaining the existing housing stock except very close to the station, and redeveloping small arterial-fronting commercial properties in limited, carefully selected locations within walking distance of the station. These choices are supported by the preponderance of unlikely redevelopment potential (red and orange) parcels in Figure PR-4, with dispersed more likely (yellow and green) parcels not concentrated near the station. This indicated the concept diagram for redevelopment around Parkrose station in Figure PR-5.

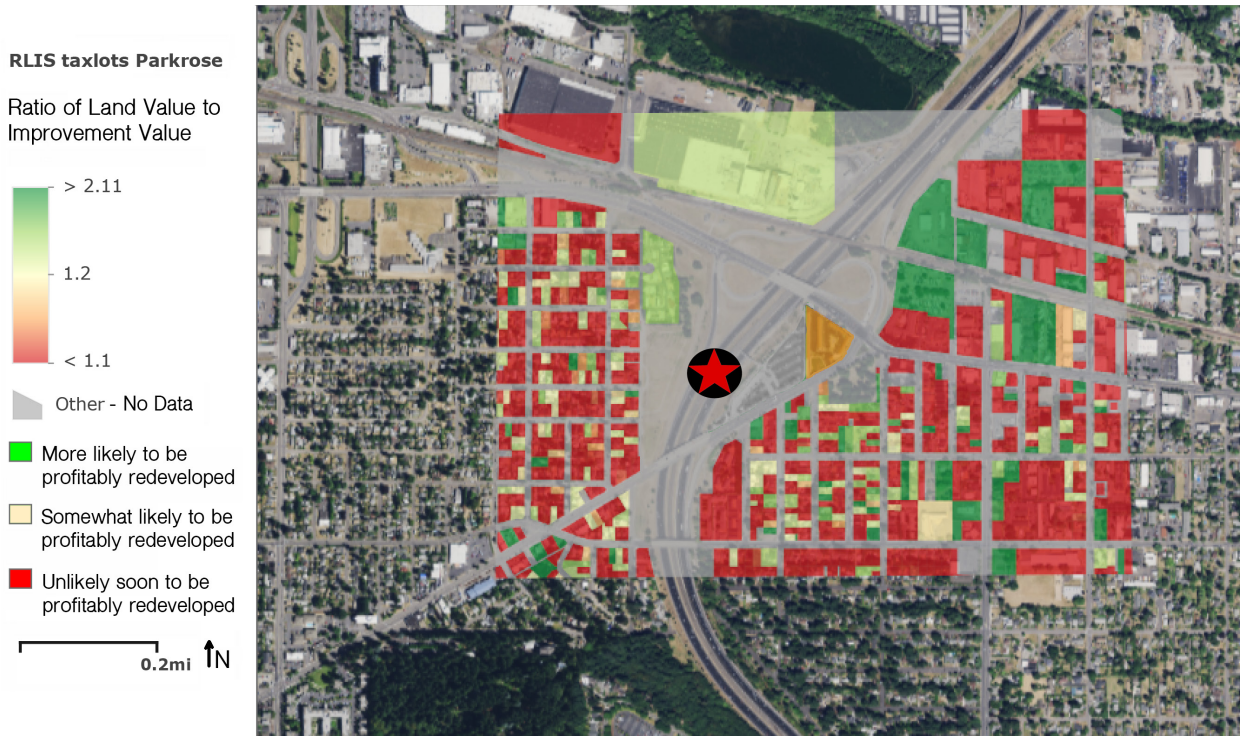


FIG. PR-4

Credit: Yeongseo Yu

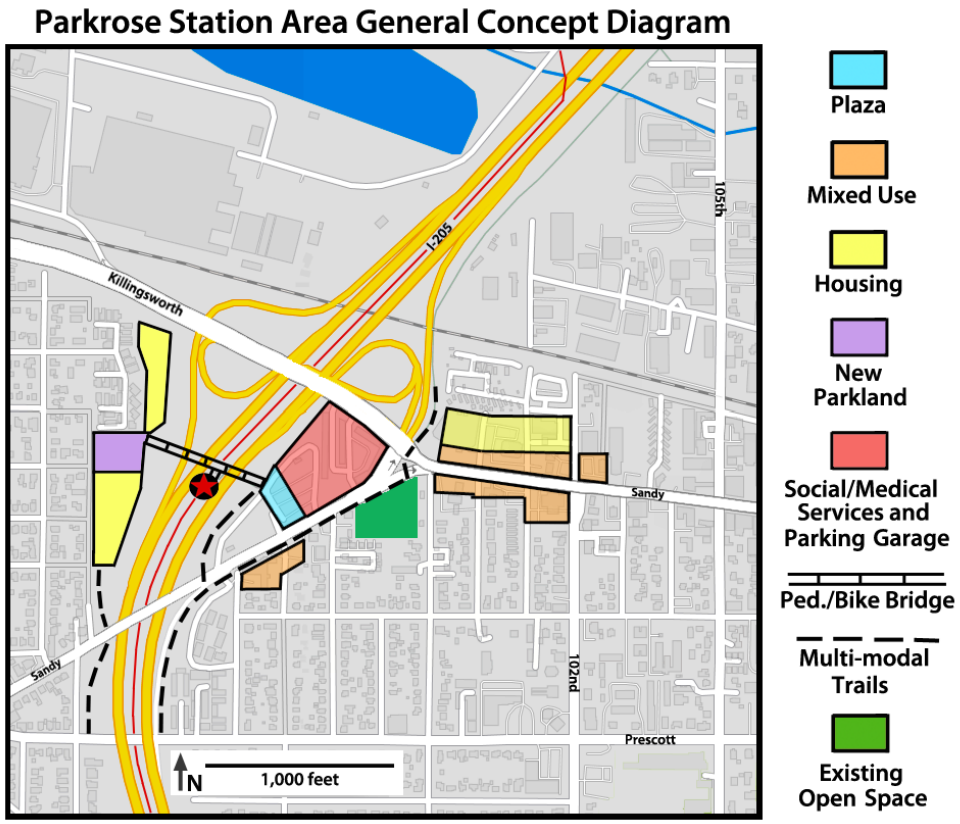


FIG. PR-5

Credit: Robert Ribe, Kennedy Rauh & Jessica Gonzalez

There are two important focus areas for the Parkrose Station area. The first is the whole block within the triangle of land between the freeway and both major arterials (Figure PR-6), including potential new uses directly across Sandy Boulevard. This triangular block includes the Quality Inn and Suites Airport Motel which the students felt should be redeveloped to a use more strongly related to the station no matter the cost. The second important area is the reasonably level ground owned by the Oregon department of Transportation (ODOT) west of the freeway on top of the freeway cut slope in the lower foreground part of the view in Figure PR-7. This area was acquired to facilitate construction of the freeway but is not in the secure safety zone near the freeway on the slope. It is now used by neighboring residents as an informal park. It could become a valuable component of the station area if brought into private ownership for housing and/or city ownership for parkland, provided that fencing continue to secure the freeway cut slope and traffic noise be mitigated.

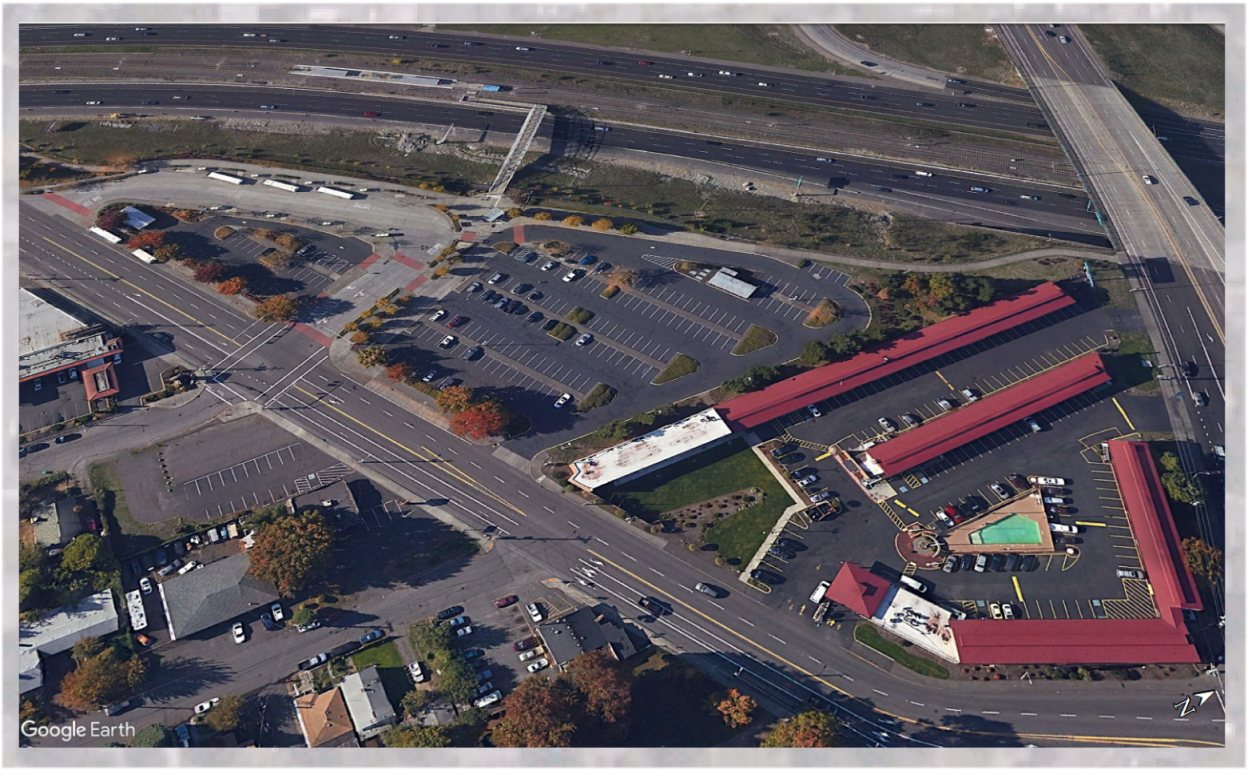


FIG. PR-6

Credit: Google Earth

FIG. PR-7

Credit: Google Earth

This western ODOT developable area is now very isolated from the station, requiring an indirect, circuitous walk or micro-vehicle ride to the south and north again on existing narrow sidewalks, informal paths and within very busy traffic lanes (for micro-vehicles) on Sandy Boulevard. A multi-modal bridge is therefore proposed to span the freeway 'canyon' between the cut slopes shown in Figure PR-8. This would provide easy access to the station for all residents of the neighborhoods west of the station as well as to residents of new housing developments in the ODOT area.

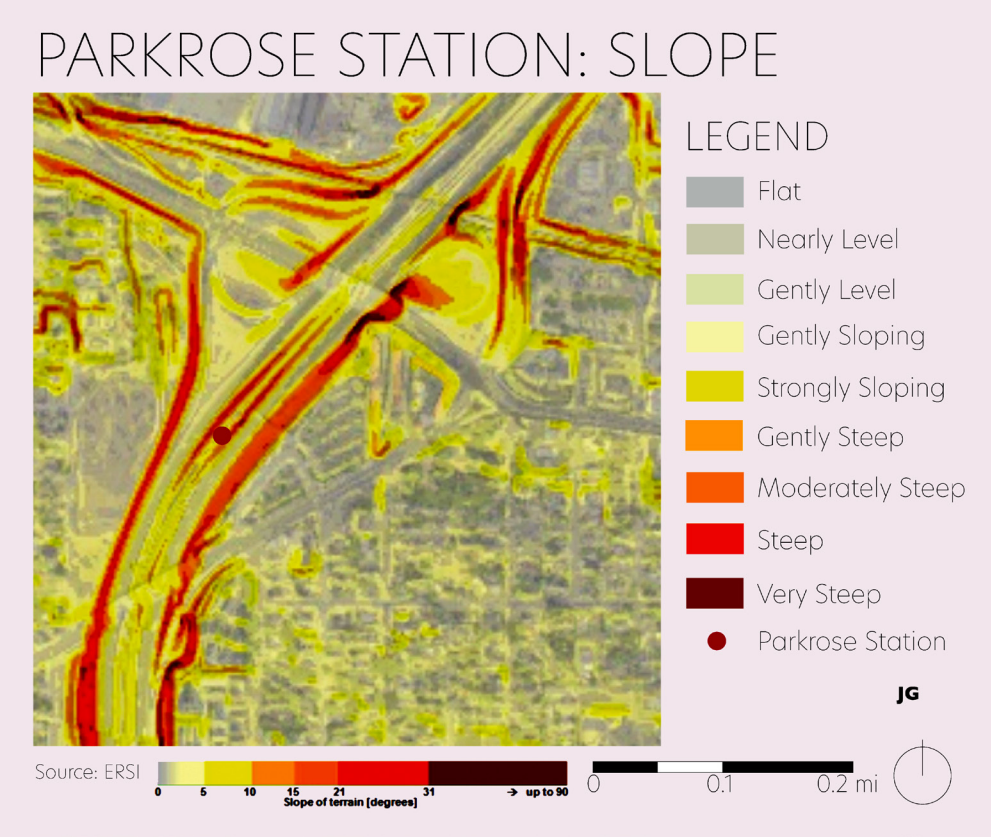


FIG. PR-8
Credit: Jessica Gonzalez

TEAM GOALS

The Parkrose Station area team chose to state their goals graphically. Their broad goals are in Figure PR-9. These emphasize adding both community services and housing for income levels already well represented in the area. Both of these items aimed to improve the quality of life for existing residents and new ones of similar incomes while abating gentrification pressures. Also important are pedestrian and new mobility connections to better connect surrounding neighborhoods to each other and to the station. More particular conceptual goals that denote physical design moves in spatial relation to the station are depicted in Figure PR-10.

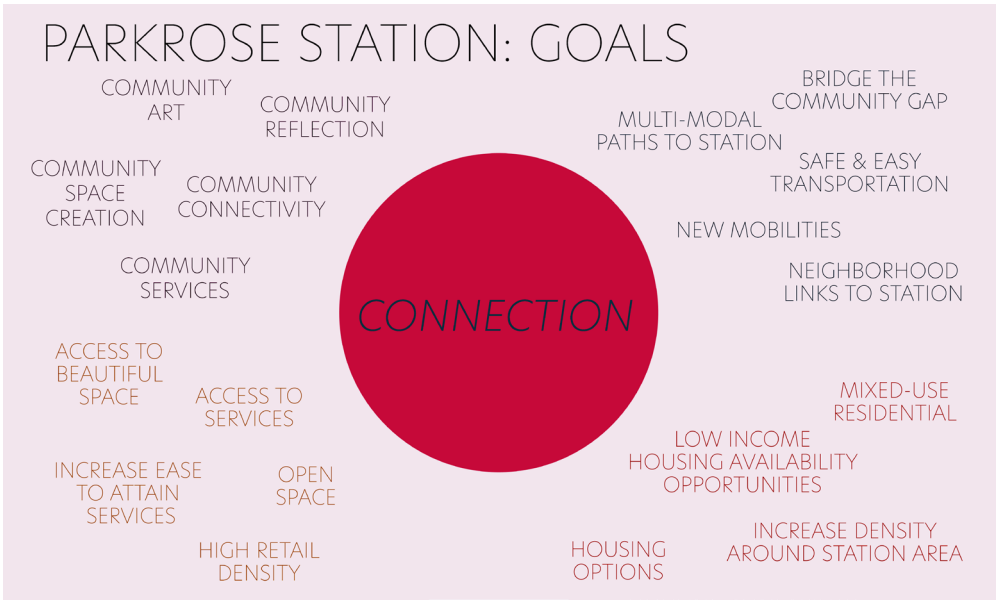


FIG. PR-9

Credit: Jessica Gonzalez & Kennedy Rauh

FIG. PR-10

Credit: Jessica Gonzalez & Kennedy Rauh

STATION AREA PLAN

The proposed Parkrose Station area plan consists of the set of land use changes mapped in Figure PR-11 and circulation improvements and phasing ideas described in this section. Other major proposals near the station will be described below in the design details sections.

New Land Uses in East Station Area

Suggested land use changes more than 500 feet away from the station are in the eastern part of the station area. These would entail rezoning. They include redevelopment of small commercial structures and houses along Killingsworth Street, as owners make these available to developers. Such replacement parcels mapped in Figure PR-11 are the students' cursory guesses about which might more likely come to market for redevelopment in the near to mid term, based only on assessed values (Figure PR-4) and superficial inspection of these properties. Their proposal is that these could be replaced with mixed-use podium buildings with store fronts facing the arterial street and low income housing on the upper floors.

Several large parcels in the east station area within walking distance of the station are proposed for single-use, low-income housing projects (Figure PR-11). These are indicated as potentially profitable redevelopment sites in Figure PR-4. Two now contain permanent recreational vehicle encampments likely supporting very low income residents who may otherwise be houseless – a category for whom housing opportunities are now scarce. These families would need to be accommodated elsewhere before redevelopment.

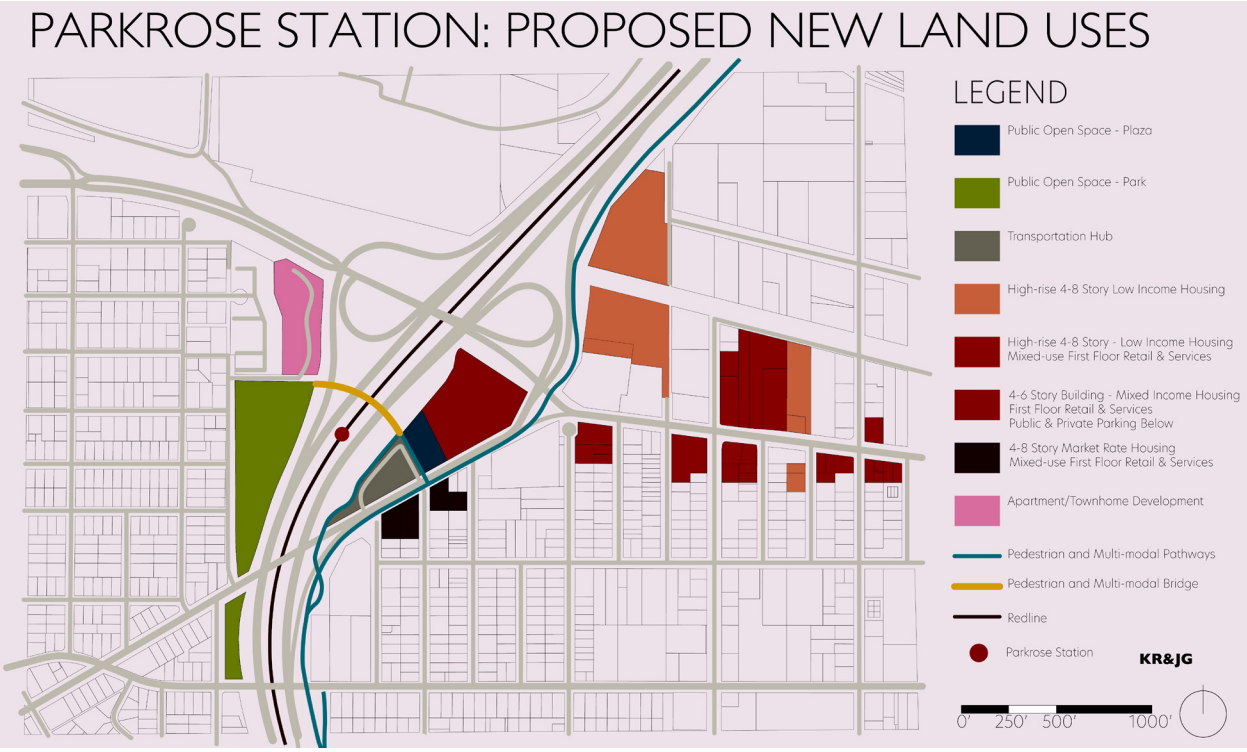


FIG. PR-11

Credit: Kennedy Rauh & Jessica Gonzalez

Circulation Plan
Proposed additions to non-vehicular circulation patterns in the station area are illustrated in Figure PR-12. That plan shows existing pedestrian and vehicular paths keyed in the upper legend. The two proposed changes are keyed in the lower legend, where the 'broken' path section refers to a problem with existing conditions, as described below.

New Bridge Over Freeway
A new bridge (Figure PR-12) is proposed for pedestrians and micro-vehicles across the freeway, likely also accessible to emergency vehicles. Design details are found below. This proposed bridge would newly provide direct station access to residents of neighborhoods west of the station and stitch together all new station area redevelopments. It would also reconnect neighborhoods that were severed by construction of the freeway. If beautifully designed, this bridge would become a major landmark denoting a cognitive entrance into greater Portland for travelers coming from Washington or PDX.

New Multi-modal Path
The Interstate 205 Multi-use Path parallels the east edge of the freeway (Figure PR-12) and is part of the extensive trail system throughout the Portland region. To the north it intersects another multi-modal path along the Oregon shore of the Columbia River. To the south it reaches Gateway Green Park, the Gateway TriMet Station and beyond and provides non-vehicular, multi-modal access to and from Parkrose Station from an extensive area. It moves right up into and through the edge of the station's parking lot to provide direct access to the existing bridge over to Parkrose Station.

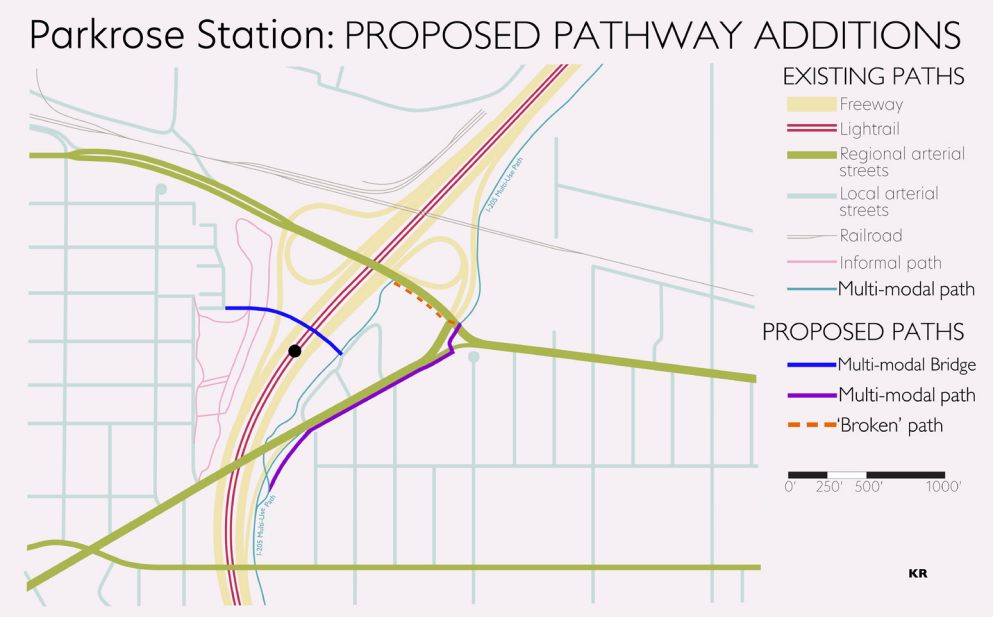


FIG. PR-12
Credit: Kennedy Rauh

The Interstate 205 Multi-use Path now encounters a 'broken' section just north of Parkrose Station indicated by the orange dashes in Figure PR-12. The path merges there onto the narrow sidewalk along the south edge of the Killingsworth Street bridge over the freeway and looses all the attributes of a safe, wide and independent multi-modal path. Users must also cross both Sandy Boulevard and Killingsworth Street using relatively unsafe and unpleasant standard, pedestrian crosswalks.

The proposed 'fix' to this 'broken' path is mapped in purple in Figure PR-12. It is to build a multi-modal path parallel to Sandy Boulevard. An improved, dedicated crosswalk with its own signal cycle across Killingsworth Street (Figure PR-13) would complete the fix. One option would be to fit the new path within the Sandy Boulevard right of way, with only a small widening into private land, as illustrated in Figure PR-14. Another more desirable, but more difficult and expensive, option would be to locate the new path off of the street through currently private land by reworking ownerships, parking lots and some structures. Altogether, by either option, this new path would be a more direct and continuous one than now available. It would have the added advantage of providing path users with close access to existing retail uses along the edge of Sandy Boulevard, including new ones built as part of station area enhancements. In that event, the new path would also be more socially alive and experientially pleasing than the current ride along the Killingsworth bridge sidewalk.

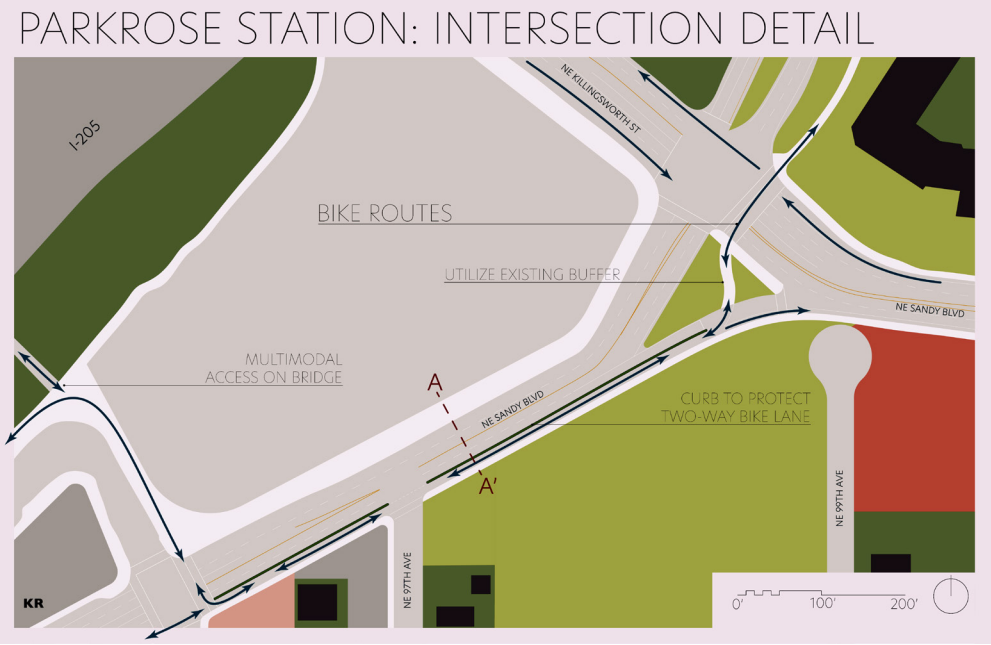


FIG. PR-13

Credit: Kennedy Rauh

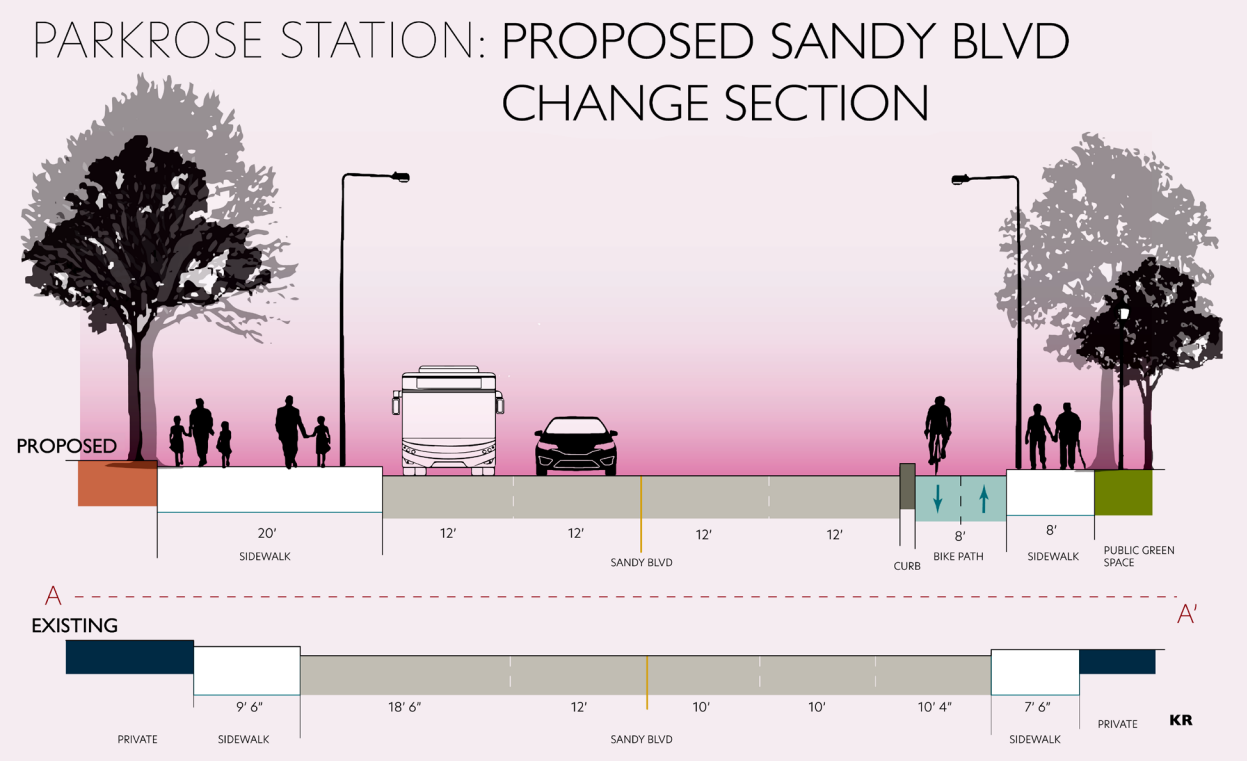


FIG. PR-14

Credit: Kennedy Rauh

Phasing Plan

A suggested phasing scheme for the Parkrose Station area plan is in Figure PR-15. It suggests the new multi-modal bridge across the freeway could be built first, followed by redevelopment of areas at both landings of this bridge. These would be housing and services at the current park and ride and motel site and a new neighborhood park on the southern part of the ODOT-owned flat ground. New housing on the rest of the ODOT site (or more of it than shown in Figures PR-11 and PR-15) might come next to take advantage of the new bridge access to the station. At about the same time, new mixed use buildings with market-rate housing could be placed directly across Sandy Boulevard from the station. Mixed-use redevelopment along Killingsworth Street could follow, with the remaining large, single-use, low-income housing projects last.

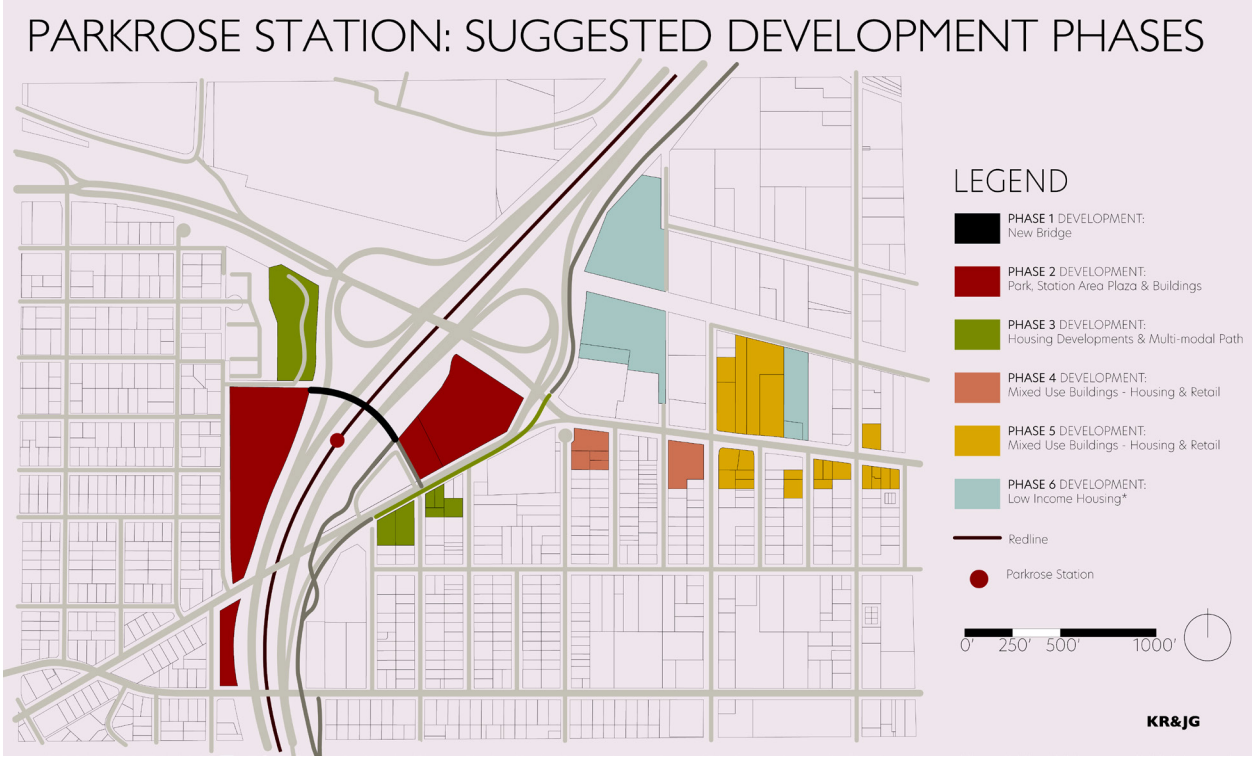


FIG. PR-15

Credit: Kennedy Rauh & Jessica Gonzalez

DESIGN DETAILS

New Bridge

Figure PR-16 offers a plan view of the proposed multi-modal bridge. It curves between the Parkrose Plaza to the east and the new community park to the west. It would be nearly level from the top of one highway cut-slope to the other. It is imagined as a relatively inexpensive cast in place reinforced concrete bridge supported by two piers in highway medians as shown. (A more expensive suspension bridge would be a stronger visual landmark and could be curved or straight.) The bridge travels directly from plaza to park and not through the station platform to keep the platform only for paying TriMet riders. As placed, it should be high enough to achieve the required clearances above the freeway lanes and the overhead catenary cables above the tracks. People would turn into the station platform via the bridge from either direction along the ramp depicted in Figure PR-17. It would have a safety railing (in blue) as would the main bridge and the ramp's slope would comply with ADA standards.

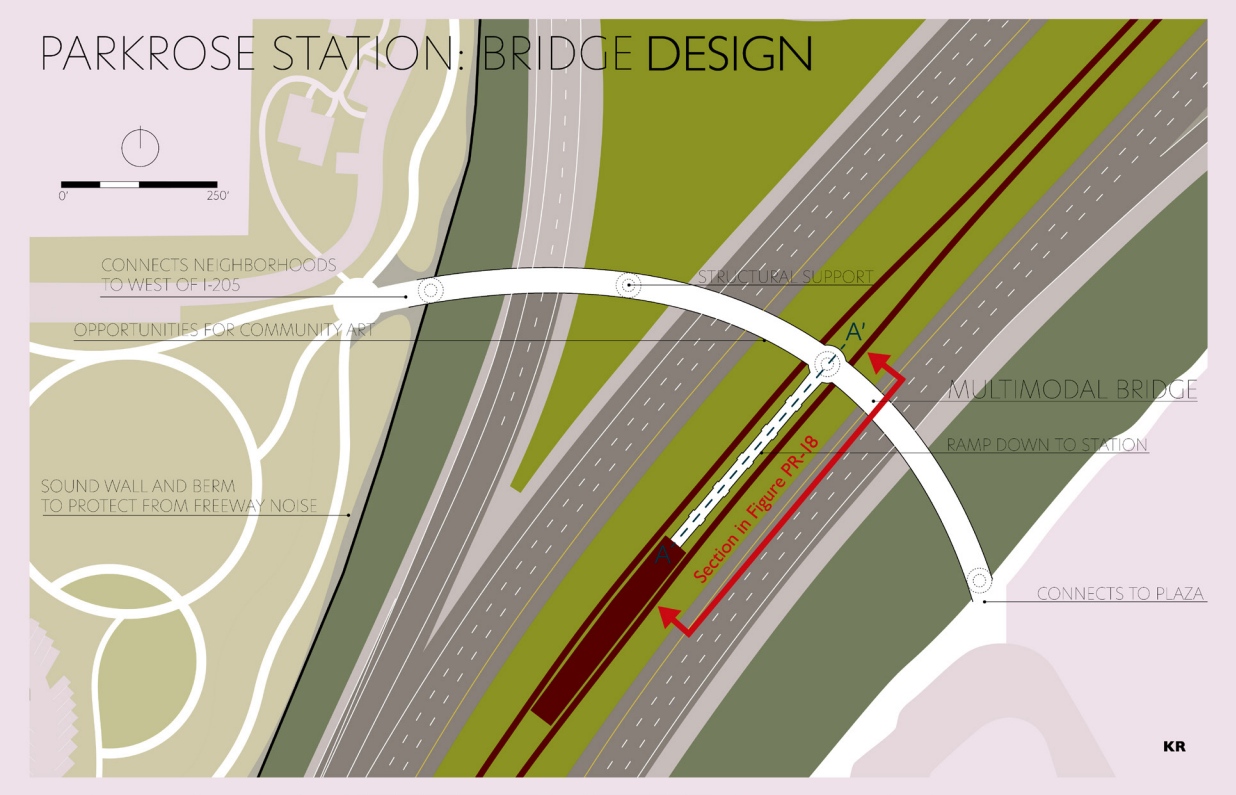


FIG. PR-16

Credit: Kennedy Rauh

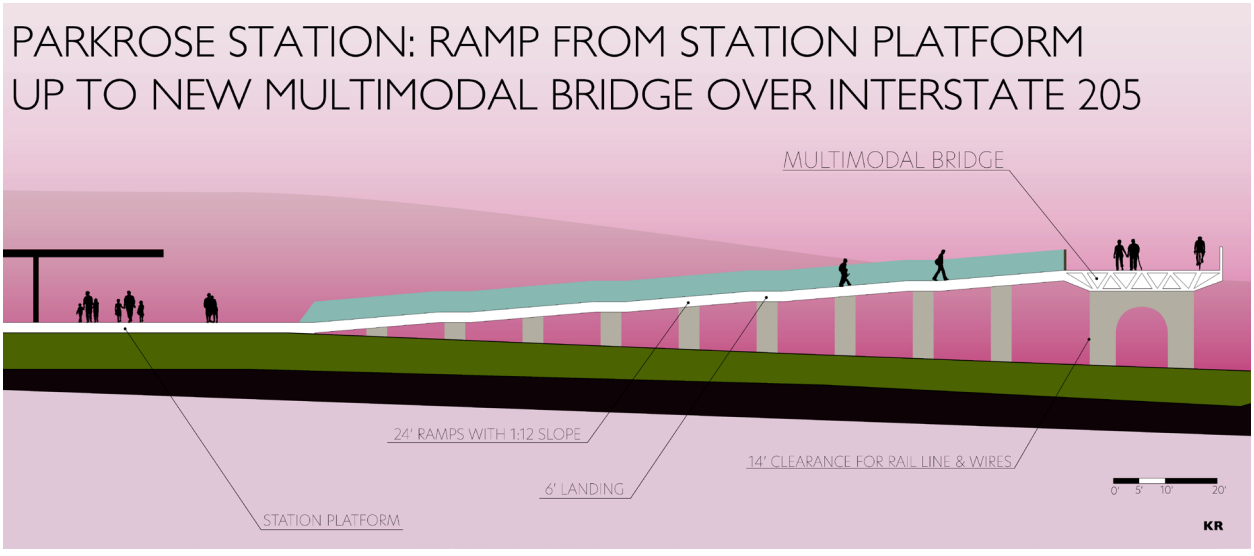


FIG. PR-17

Credit: Kennedy Rauh

New Station Center

The plan for the station center is depicted in Figure PR-18. It proposes to leave the bus station mostly unchanged with only the addition of a NTC (ride sharing) pick-up and drop-off lane along the north edge. The parking area within the bus zone would become short term parking. Mixed-use buildings with market rate housing and first floor retail would be built across Sandy Boulevard from the new station center. Other proposed changes are described below.

A new station structure is proposed at the site of the existing TriMet park and ride lot and the Quality Inn and Suites Hotel (Figure PR-19). The lower 1-3 floors would be a large parking garage principally for park and ride related to the station but also for patrons of the proposed new retail, services and parks in the enhanced station area. One or two of the parking levels could be underground.

Another world of 'two-story' structures and life is proposed on top of the parking garage with views (Figure PR-19). These would include a community clinic, mixed income residential and some small retail/ commercial units with 'street' spaces between. The northeastern spaces near the larger 'buildings' might be only for residents and the other such spaces for visitors. Escalators (inside the clinic building) and elevators (inside all buildings) would provide access from the plaza level and parking garage. (The student team did not resolve the redesign of the two arterial streets to accommodate the parking garage entrances shown in Figure PR-19.)

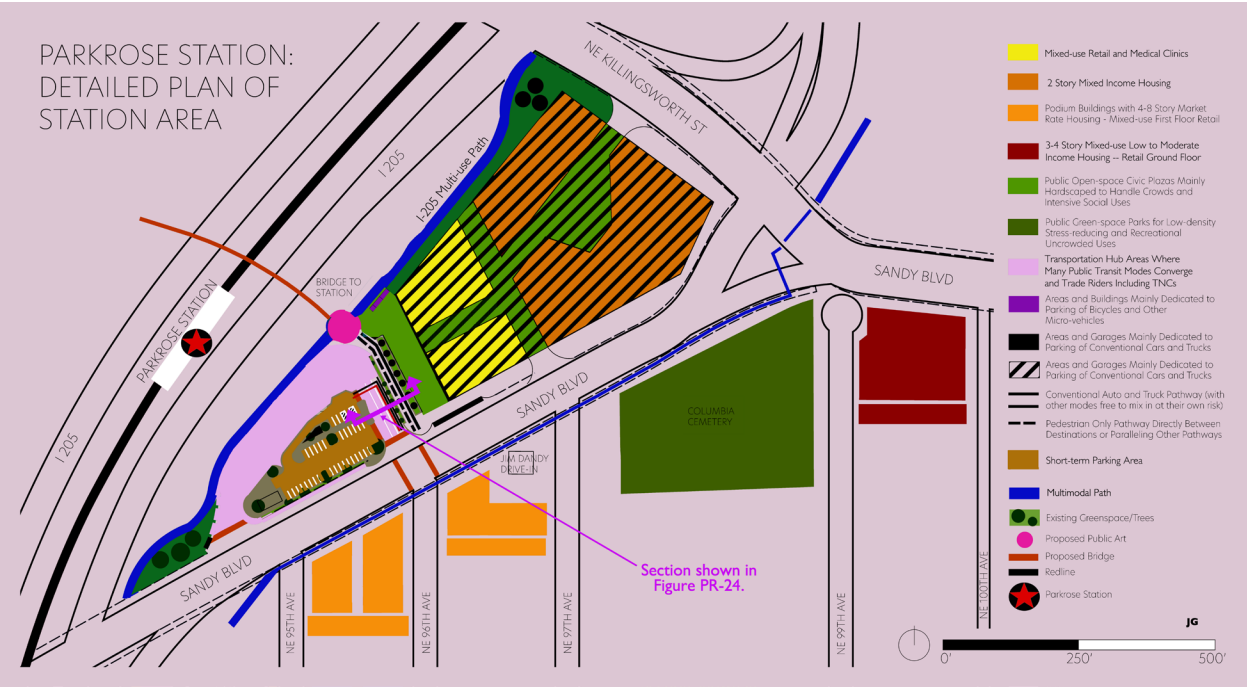


FIG. PR-18

Credit: Jessica Gonzalez

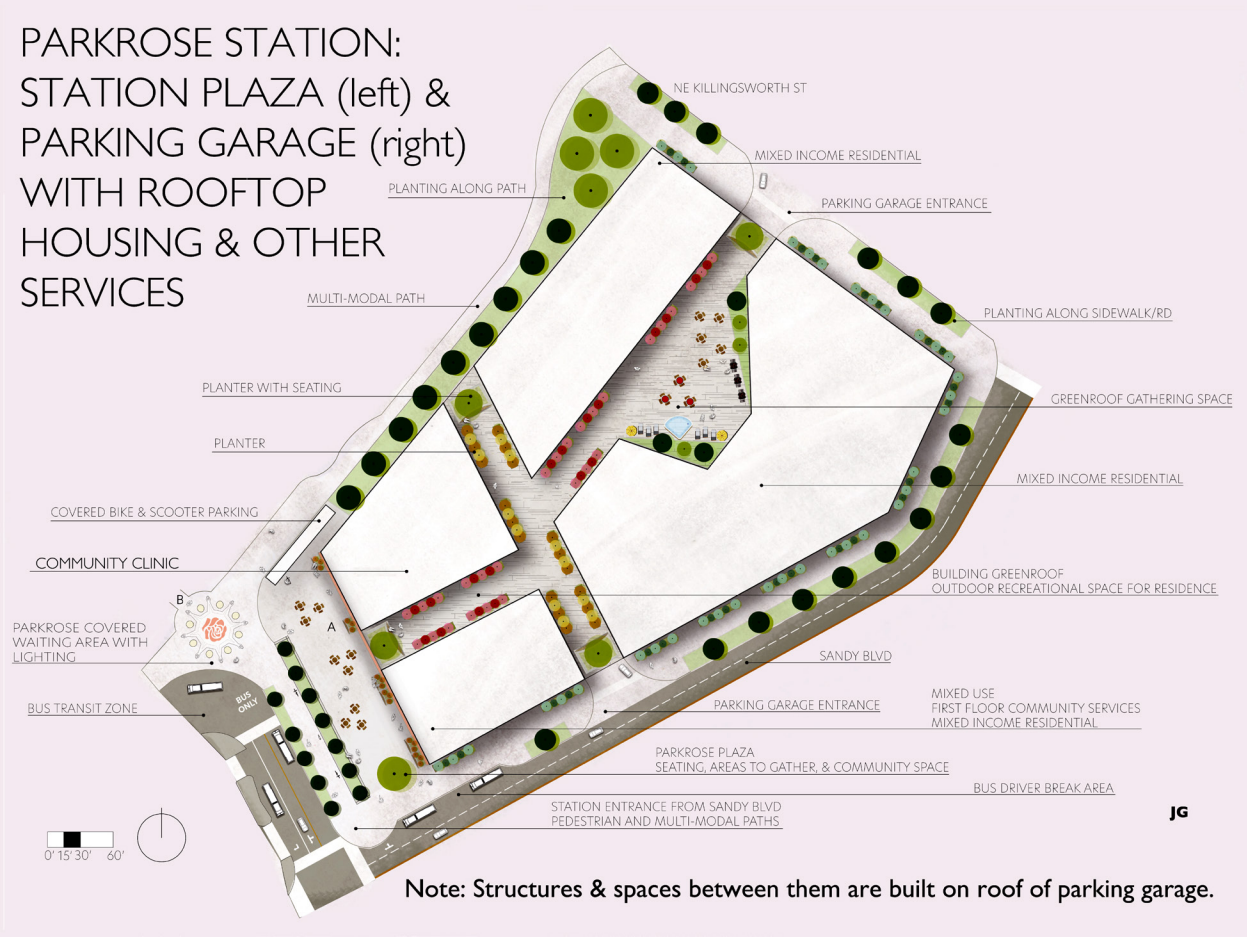


FIG. PR-19

Credit: Jessica Gonzalez

Parkrose Plaza

Along the west edge of the garage structure would be a new ground level Parkrose Plaza (Figure PR-20). This would be the central hub of the station area with retail units facing it from within the garage structure. These retail shops would provide food and other 'pick-up' items between the train and auto or home. Parkrose Plaza would be the social space where people would eat at the tables, traverse, talk, wait, phone-browse or shop on the way to and from the trains. An artwork embedded in the pavers between the bridge and the entry walk along the edge of the plaza would be the aesthetic node and center of gravity of the whole station area. It might have a roof over it and yield a view from the new bridge something like that in Figure PR-21. The transition between the short term parking area through the entry walk between rows of trees to Parkrose Plaza is illustrated and dimensioned in Figure PR-22.

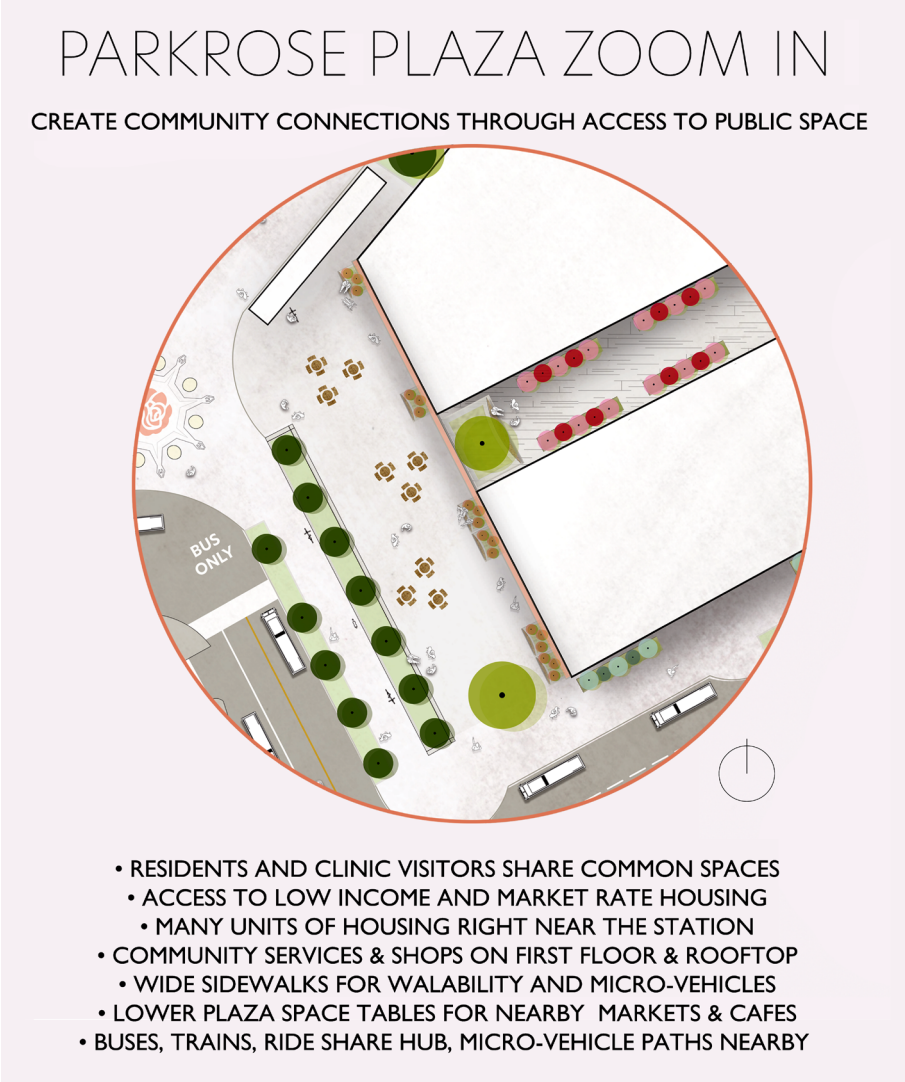


FIG. PR-20

Credit: Jessica Gonzalez

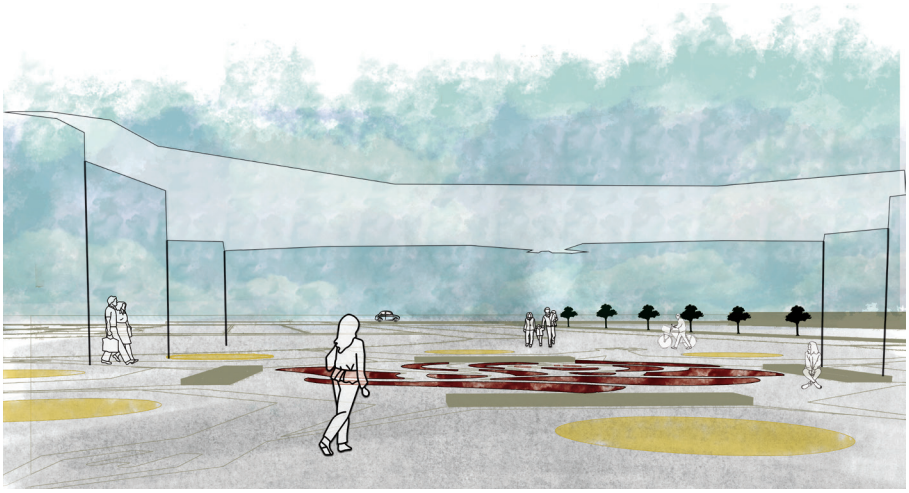


FIG. PR-21

Credit: Jessica Gonzalez

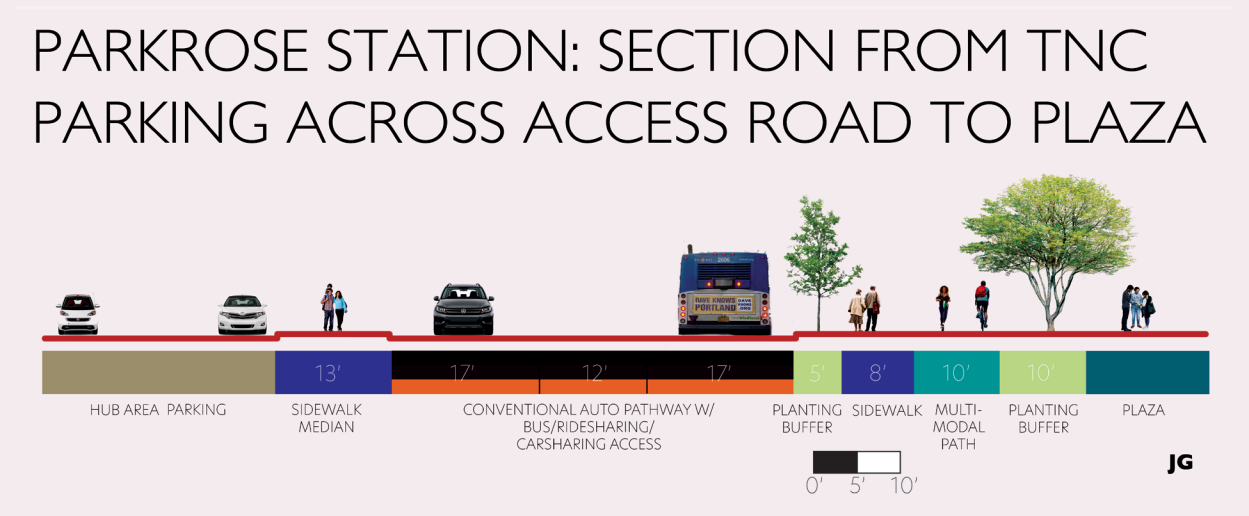


FIG. PR-22

Credit: Jessica Gonzalez

West Side Proposals

The proposed multi-modal bridge across the freeway at Parkrose Station will bring the neighborhood to the west fully into the station area. The proposed station area plan contemplates changes there only on the more level grounds owned by ODOT which are outside the freeway security fence, which is the extent of colored areas in Figure PR-23. Residents now use most of this land an informal park. A walking path is proposed along the edge of this area next to the security fence all the way from Killingswoth to Prescott Streets. The students suggest that this path would include traversing the now vacant, mounded ODOT parcel south of Sandy Boulevard and west of the freeway; but they have not resolved how users would safely cross Sandy Boulevard in mid block.

New Housing

A recently built set of low-income homes has already been constructed in the northwest corner of this land; and the student team proposes that more such homes be built to the east, almost up to the freeway security fence. They propose that these might be sets of abutting townhomes withy their own new access street, as shown in Figure PR-23. This would be a meager number of added housing units than is usually warranted by a new addition to a station area; and this housing development could extend further south than the students propose.

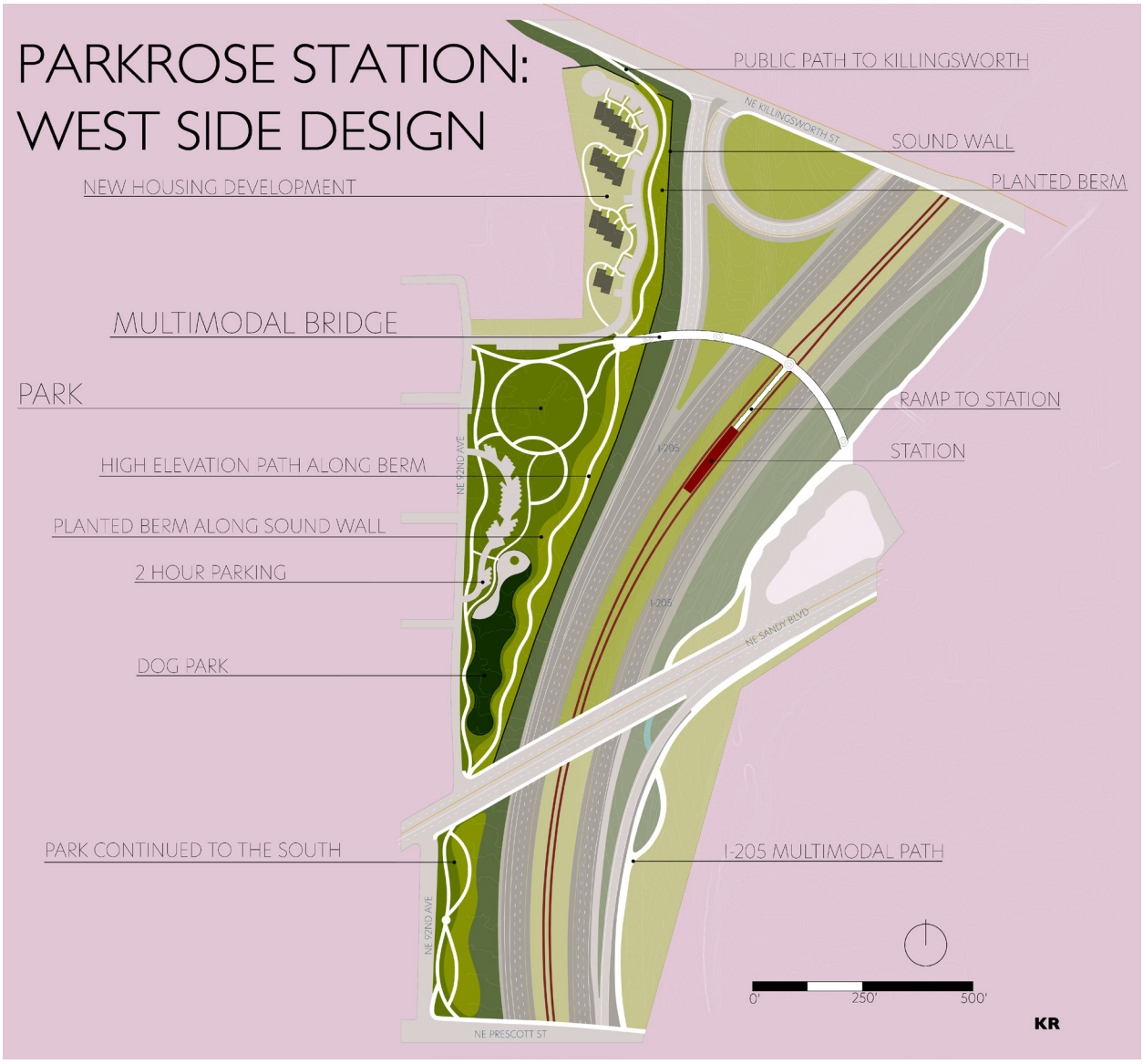


FIG. PR-23

Credit: Kennedy Rauh

Parkrose West Park

Figure PR-24 is a close up view of the new park the students propose between the existing residential neighborhood and the new bridge to Parkrose Station and Center. It adds a conceptual planting plan and more labels than Figure PR-23. It would be a neighborhood park, by Portland's classification, offering a playground, dog park, picnic areas, pastoral lawn and informal playfield. Its parking lot would be short term only, to prevent transit riders from occupying all the spaces much of the time. The student team did not resolve the problem of managing the likelihood that residential streets near the park would likely fill up with transit riders' vehicles much of the time. The park design offered in Figure PR-24 is larger than necessary to be a neighborhood park with its set of amenities and could be scaled down to provide more space for housing or station parking.

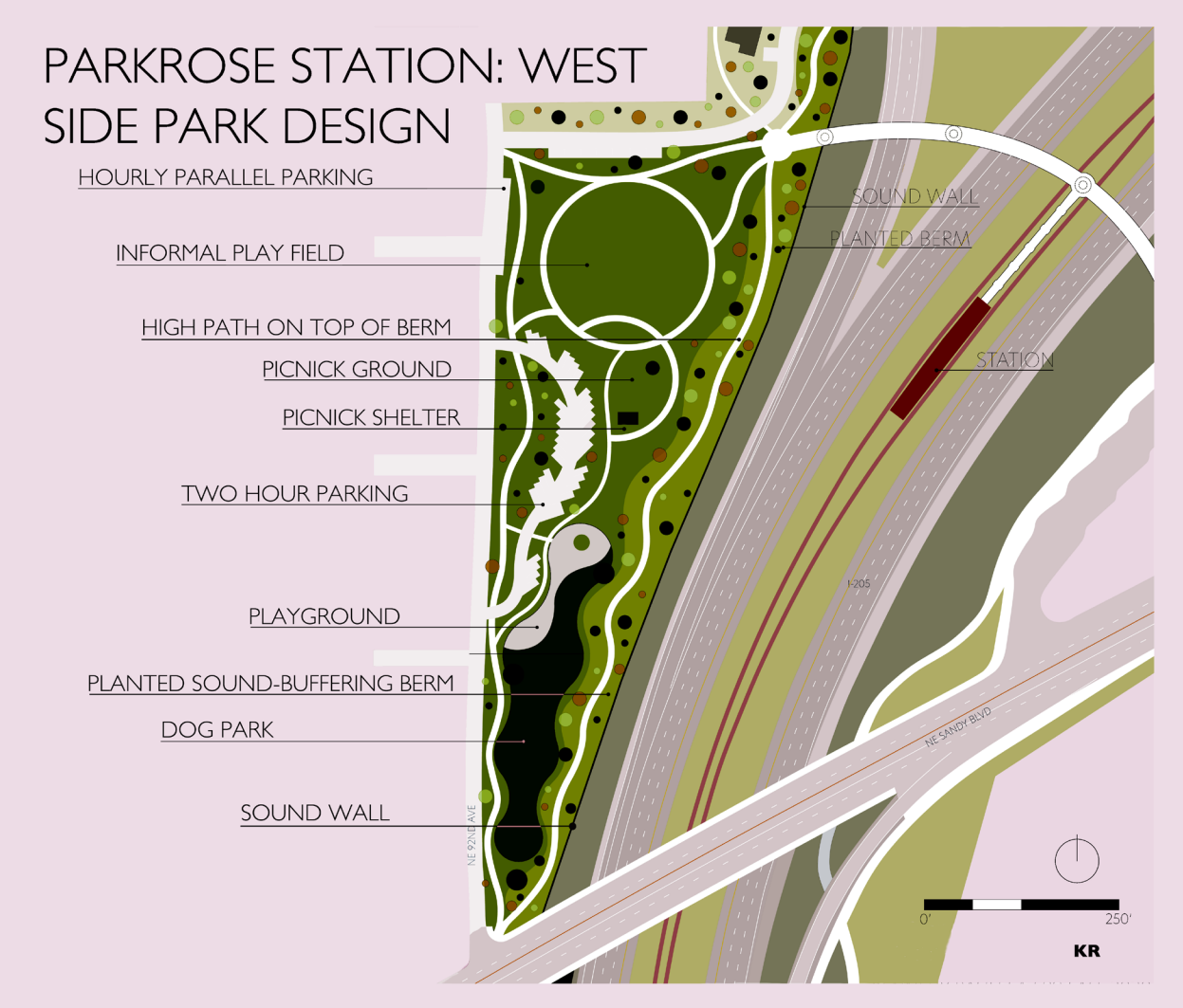


FIG. PR-24

Credit: Kennedy Rauh

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